

Study on the Physical Training of Men's Basketball Team of Naval Aeronautical University preparing for the "Strong Army Cup" Basketball Tournament of Military Academies

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Abstract. The Naval Aeronautical University basketball team represented the Navy to participate in the 2023 military academies "Strong Army Cup" basketball tournament, and won the runner-up, creating the best result of the Navy. This paper studies the special physical training and competition performance of basketball training for three months, analyzes the winning factors and shortcomings, and puts forward suggestions for improvement.

Mainly using case analysis and data statistics, the physical performance data in 8 group matches and 1 final match were collected and analyzed effectively in combination with the special physical training plan for basketball. In addition, the training plan of the preparation for the competition was evaluated by the method of literature and expert interviews, and the feasible suggestions were put forward in combination with the characteristics of the competition to effectively improve it. Through the in-depth analysis of the characteristics of basketball, the evaluation index of basketball physical fitness is defined, and the level of basketball special physical fitness is improved by functional training, which lays a solid theoretical foundation for the preparation for the later competition.

The physical training content of the Naval Aeronautical University basketball team is mainly upper body strength, lower body strength, core strength and comprehensive strength training, which is basically suitable for the characteristics of basketball projects and the characteristics of basketball competitions in military academies. Combined with some content of military sports training, it is worth learning.

The physical training of Naval Aviation University basketball team needs to improve the structure of strength training and strengthen the maximum strength training; Effectively strengthen speed endurance training, strengthen physical reserves; Monitor the athletes' physical training load, arrange targeted individual physical training supplement plan; The physical training will run through the whole process of basketball training, improve the quality and effectiveness of physical training while improving the basketball skills and tactics of athletes, and build a "Capable of fighting and winning battles" iron and blood team.

Keywords: Basketball; Physical training; College basketball game of the whole army; Naval Aeronautical University.

The "Strong Army Cup" series of competitions in 2023 will be hosted by the Training Management Department of the Central Military Commission and hosted by the Military Sports Training Center of the Training Management Department of the Military Commission and the People's Government of Nanchang City. The basketball tournament was held in Nanchang Municipal People's Government from August 1 to 12, with 9 teams participating. The Naval Aeronautical University basketball team represented the Navy to participate in the basketball tournament, and won the runner-up, creating the best result of the Navy. In the three-month

preparation training, the special physical training of basketball is an important training content, which needs continuous research and improvement.

1. Analysis of the Characteristics of Basketball Specific Physical Fitness and Quality

The analysis of basketball special physical characteristics is the basis of basketball special physical training, which provides theoretical data support for the completion of special competition tasks, and requires the understanding of athletes' physical characteristics from the perspective of basketball special characteristics and competition characteristics. The special physical fitness of basketball is formed by congenital heredity and acquired training, and the ability of the body to continue to move in basketball. It is closely related to the body form structure, the function level of the system organs, the level of sports quality, the storage of energy and material, the basic metabolism level, the psychological factors and the quality of will and the external environment. Compared with other basketball competitions, the difference is that the participants are different, the army competition focuses on the military participation, and its "one is not afraid of hardship, two are not afraid of death" battle character needs us to pay more attention in the preparation stage. In the category of sports groups, basketball belongs to the same competition group, physical fitness plays an important role in the composition of its competitive ability, which is the key factor to achieve excellent sports results in special competitive sports competitions. It is mainly manifested in the following aspects:

1.1 Body shape

With the continuous development of world basketball, the enlargement of basketball players has become an important criterion for the selection of basketball players. The requirements of this "Strong Army Cup" basketball game must be school students, and must be active soldiers. At present, the overall body standard for joining the army is: male 160cm or more, female 158cm or more, and special arms such as pilots, and there are height limits. Most of the students in our school are pilots, and their height limit is 185cm, so compared with the height of the army, the armed police and other military services, there are obvious disadvantages. For the ground students, strive to achieve the same level of competition players of the height.

1.2 Speed

Speed is an important condition for gaining time advantage in basketball games, and is the key to winning in offensive and defensive turns. The standard is different, its classification is also different, the more recognized basic manifestations of speed at this stage are reaction speed, action speed and moving speed. In basketball, there is a fierce confrontation in running, to break through the defense, and to adapt to the defensive action in fast running. Then in the military academies, this feature will be more prominent, and it also requires a high degree of stability. Therefore, the speed in basketball has the special characteristics of adaptability, stability, concealment and surprise. The special speed of basketball players is mainly reflected in :① displacement speed; ② Reaction - starting speed; ③ speed of individual technical action; ④ Attack speed; ⑤ Defensive speed; ⑥ Speed of offensive and defensive transition; ⑦ Defensive counterattack speed; ⑧ Dribbling speed; ⑨ Passing speed; ⑩ Shooting speed. The basketball game of the military academies has the characteristics of fast transition of attack and defense and high proportion of transition offense, so only by improving the advantage of speed quality can we get the winning advantage in the high-intensity and

multi-transition game environment. The speed of the athletes should first reach the level of the requirements of rapid attack and defense in the competition, so as to give full play to the technical and tactical requirements arranged by the coaches. In order to meet this requirement, the athletes' observation, judgment, reaction and action speed in the game need to be more rapid and agile, and the application of skills and tactics need to be more rapid and compact, such as the connection between action rate, moving speed, center of gravity adjustment and technology is significantly accelerated, and the tactical changes of offensive and defensive transition are coherent and close. It can be seen that acceleration and speed of acceleration are the core of basketball players' speed, rather than absolute speed.

1.3 Strength

With the increasing trend of basketball, strength quality is more important. Military physical training subjects such as horizontal bars, parallel bars, etc., are closely combined with the strength quality of students, so the players in this competition also have good strength quality, the strength quality is more prominent is relative strength. Strength quality is an important part of the physical fitness of basketball players, and it is the basis of giving full play to skills and tactics. All parts of the body, especially the upper and lower limbs, waist and abdomen, as well as ankles, knees, wrists, fingers should be dedicated to comprehensive strength strengthening training, aimed at developing the muscle strength of each exercise link, to achieve the purpose of overall strength improvement. The overall strength is the comprehensive strength shown by the coordination of all sports links when the athletes are engaged in the special ball activities.

1.4 Endurance

Endurance quality refers to the ability of the body to maintain a specific intensity load or movement quality for a certain period of time. Endurance quality according to the standard has a variety of classification, which is divided into general endurance and special endurance according to the impact on the special. Special endurance refers to the endurance quality closely related to the special sports performance, that is, the endurance of continuing to complete the special action or close to the game action. Because the players in the basketball game of the military academies are all soldiers, their general endurance quality is relatively excellent, which is mainly inseparable from the regular endurance training such as 3000 meters running. However, basketball has a small field, high intensity, strong antagonism, and in order to maintain the combat effectiveness of both sides frequently change, these characteristics require basketball players to first have good anaerobic endurance, especially the ability to maintain high intensity, explosive movement, that is, the ability to repeatedly carry out short distance high intensity exercise for a long time. Interspersed with a variety of sudden start, sudden stop, jumping, sliding and other actions, and have sufficient body collision; Short-distance high-intensity sports refer to the quick start, quick stop, jumping, sliding and other foot movements, the actual distance is short, but all belong to the extreme and sub-extreme sports. Basketball special endurance is mainly reflected in the ability to maintain repeated short distance, high intensity intermittent exercise.

1.5 Agility, coordination and flexibility

In basketball, the quality of agility is mainly reflected in speed, coordination and accuracy. Only with these quality elements, can basketball and the special characteristics of rapid response, strong adaptability closely combined, so as to enhance the players' technical and tactical level of play.

Basketball is determined by the score in the basket. In high-intensity confrontation and fast offensive and defensive rhythm, there will be high-difficult scoring techniques in sports, such as fadeaway jump shot, cross-step breakthrough, aerial confrontation layup, etc., which need our athletes to have good coordination quality as support. The significance of flexibility quality in basketball is mainly to require athletes joint ligaments, especially the toughness of the waist, hip shoulder, leg and ankle joint ligaments, which has positive significance for athletes to increase the intensity and amplitude of actual combat technical movements and reduce athletes' body injuries.

2. Clear basketball special physical evaluation indicators

According to the characteristics of basketball and physical fitness, combined with the actual characteristics of military basketball games, through the form of expert consultation, 24 indicators were determined to carry out a questionnaire survey on the weight of the factors affecting the special physical fitness of basketball. After screening in the business part, 17 indicators were finally selected to reflect the physical fitness structure of basketball. After the questionnaire design was completed, the weight index of evaluation indicators was investigated among 20 basketball teachers, including 8 in the military and 12 in local areas, all of whom were above secondary vocational schools. Table 1 is the expert questionnaire.

Table 1 The Expert Questionnaire.

Number	Source	Title	Number of people
1	Within the military	Junior Title	8
2	Universities	Senior Title	12

The results of the investigation show that:

(1) The strength, speed, bounce, sensitivity and flexibility that reflect the physical quality, as well as the height and weight that reflect the physical form have been highly valued by experts and scholars in the basketball field.

(2) The quality of attention, consciousness and will also play a very important role in the weight index.

(3) Morality, emotion, memory, adaptability, judgment are in a secondary position in physical fitness.

Table 2 Statistical Table of Weight index of Special Physical Fitness Evaluation index of Basketball

	n	min	max	x	s
Strength	40	5	5	5	0
Speed	40	5	5	5	0
Bounce	40	5	5	5	0
Height	40	4	5	4.7	0.464
Weight	40	4	5	4.7	0.464
Attention	40	4	5	4.63	0.490
Consciousness	40	3	5	4.55	0.639
Sensitive	40	3	5	4.55	0.552
Endurance	40	4	5	4.48	0.506
Flexibility	40	3	5	4.45	0.552
Will	40	3	5	4.45	0.597

Experience	40	3	5	4.45	0.678
Motivation	40	4	5	4.43	0.501
Judgment	40	4	5	4.4	0.496
adaptability	40	3	5	4.28	0.640
memory	40	4	5	4.28	0.452
Emotions	40	3	5	4.25	0.707
Morality	40	3	5	4.23	0.698

3. Functional training into basketball special physical training

With the continuous development of basketball, it is more and more prominent to complete the skills and tactics of high quality under high speed and strong confrontation, and improve the core competitiveness of the team. Basketball physical training has become one of the key factors for the team to achieve excellent results. Functional training is a comprehensive training that not only focuses on muscle strength or flexibility, but also focuses on all aspects of the body's motor control, such as the nervous system, coordination, and sensitivity. As a new training concept, it has many innovations, and has the following reference significance for basketball physical training.

3.1 Accurately grasp the competitive characteristics of basketball

Functional training is a targeted training aimed at achieving a certain "function". In basketball training and competition, functional training refers to the focus on the special technical movements of basketball (including offensive and defensive technical movements), the main training content is the practice form that conforms to the special technical movements of basketball, the direct goal is to improve the special physical fitness of basketball, and the physical performance in the process of basketball competition is the evaluation means. It is not difficult to see that functional training is a high degree of combination of physical training and special, all aspects of functional training reflect the special physical training, reflects the unity of physical fitness and skills, reflects the unity of physical fitness and competition.

3.2 Strengthen the core strength quality of college basketball players

3.2.1 Core strength is an important basis for completing basketball skills and tactics

The technical and tactical action of basketball project can not be successfully completed by relying on a single muscle group, and it must be coordinated by multiple muscle groups to exert force, cooperate with each other and coordinate work. In this process, the core muscle group plays the role of stabilizing the center of gravity, generating force and transmitting force, and is also the main link of the overall generating force, and plays a pivotal role in the collaborative work of the upper and lower limbs and the integration of force. For example, as an important means of scoring in basketball games, jump shooting technology needs to be coordinated from the bottom up, starting from the foot, conducting through the legs, knees, waist, shoulders and other parts, and finally throwing the ball through the finger and wrist. Therefore, the technical movement of basketball is a movement chain centered on the core strength, and the strong core muscle group plays a stable and supportive role in the movement of the body posture, motor skills and special technical movements. Therefore, the core strength of athletes is an important basis for the completion of basketball skills and tactics.

3.2.2 Core Strength is the key to stable play in high-level competition

It is not difficult to see that the level of confrontation in basketball is getting higher and higher, the strength, speed and other qualities of the whole team of athletes are obviously improved, and the level of confrontation in the game is getting higher and higher, how to play stably in the high-level and strong confrontation basketball competition, This is a topic that every coach needs to study deeply. Core strength training can stabilize the spine and pelvis of athletes, maintain correct body posture, improve body control and balance, and enhance the energy output from the core to the limbs and other muscle groups during exercise. After further strengthening the core quality of athletes, the level of cooperation between participating muscles and the ability to control the center of gravity of the body in high-speed sports are improved, which better ensures the play of technical movements. Therefore, the core strength is the key to the stable play of athletes in high-level basketball games.

3.2.3 Core strength training is an important means to effectively prevent sports injuries

With the continuous development of basketball, the trend of high intensity and high confrontation is becoming more and more obvious, and the incidence of sports injury is also increasing. For example, in the "Strong Army Cup" basketball game of the whole army academies, there are four teams that need to replace the injured athletes, and through the analysis of the injury situation, they are caused by the loss of balance after the confrontation. Core strength training can effectively improve the athletes' resistance ability and body control ability after resistance, and can effectively prevent the occurrence of sports injuries.

4. Analysis of Men's basketball Training Plan of Naval Aviation University

Table 3: Preparation training plan of Naval Aviation University basketball team

Date	Time	Place	Content
5.20	9:00--12:00	gymnasium	1. Ball training 2. One-on-one full-court dribbling training 3. Full-court passing and shooting training 4. Rebounding drills
	15:00--18:00	gymnasium	1. Full-court passing training 2. Defensive training 3. Shell system defensive training 4. 1-3-1 defensive training
5.21	9:00--12:00	gymnasium	1. Ball training 2. One-on-one full-court dribbling training 3. Full-court passing and shooting training 4. 2-3 person cooperation training

	15:00--18:00	Strength room	<ol style="list-style-type: none"> 1. Upper body strength: bench press, three head training 2. Lower body training: squat, farmer's walk 3. Core training: Russian twist, plank 4. Comprehensive training: Rocket press 5. 2000 meters run: pace 12
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This training plan is the weekend two-day training arrangement of Naval Aviation University men's basketball, physical training in addition to the combination of ball training, but also arranged a separate half-day strength training. Enhance upper body strength through bench press and tricep strength training; Strengthen the strength level of lower limbs through squat, farmer walking, etc. Strengthen the core strength level through plank and Russian twist; Through rocket push, etc., strengthen the comprehensive strength level; The last 2,000 meters of the race is a power shift. Through a comprehensive strength training, it can effectively improve the strength quality level of athletes, and lay a good physical foundation for next week's basketball technical and tactical training.

5. Conclusion and Recommendation

5.1 Conclusion

5.1.1 The physical training content of Hainan Men's Basketball team mainly includes upper body strength, lower body strength, core strength and comprehensive strength training.

5.1.2 The physical training of Hainan Men's Basketball Team is basically suitable for the characteristics of basketball programs and the characteristics of basketball competitions in military academies. It is worth learning from combined with some content of military sports training.

5.1.3 The main reasons for the poor confrontation ability and fear of pressing in the final of Hainan Men's Basketball Team are lack of physical strength and poor strength.

5.2 Recommendation

5.2.1 Improve the structure of strength training, strengthen maximum strength training, and explore core stability training suitable for the characteristics of basketball programs to enhance physical confrontation ability.

5.2.2 Training to effectively strengthen speed and endurance is to adapt athletes to the running load of the basketball court and strengthen physical reserves.

5.2.3 Monitor the athletes' physical training load and arrange targeted individual physical training supplement plans. 5.2.4 Grasp the rules of basketball movement, run physical training through the whole process of basketball training, improve the quality and effectiveness of physical training while improving the basketball skills and tactics of athletes, and build a iron-blood team that "dares to fight and win battles".

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