

# The Influence of Tennis on the Physical Quality of Female College Students and the Intervention Measures

Huali Yang, Fengjuan Wang\*

Department of Physical Education, Hebei Normal University for Nationalities, Hebei, Chengde 067000, China

\*Corresponding Author e-Mail: 2300596800@Qq.Com

**ABSTRACT:** With the Rapid Development of Modern Society, the Level of Competition Has Put Forward Higher Requirements, with the Development of More Professional Tennis, the Competition of Its More Difficult, the Physical Quality Requirements Have Gradually Increased. This Article Starts from the Research on the Causes of the Decline of the Physical Fitness of Female College Students, and from the Angle of Improving Their Physical Fitness and Improving Their Physical Shape through the Investigation of 400 Female College Students in Hebei Province, a Series of Influence Experiments Were Carried out to Design a Scheme for Female College Students in Tennis. the Result of the Experiment: We Observed the Female College Students' Tennis Training for Nearly a Semester, and Found That the Subjects Showed Obvious Enhancement in the Long Jump and the Step Experiment and Physical Indicators of Lung Capacity, Body Fat Percentage, Body Shape, Weight and Height in All Areas Have Varying Degrees of Change. by Comparing the Data of the Shape and Quality Test of the Students Before and after the Experiment, the Paper Provides a Scientific and Effective Theoretical Basis for the Female College Students to Participate in Tennis Reasonably the Vast Number of Tennis Enthusiasts All Aspects of the Quality of the Practice Methods and Requirements Have Also Made Progress.

**KEYWORDS:** Tennis, Physical fitness, Preventive measures

## 1. Introduction

In recent years, the rapid development of tennis, highly professional and commercial increasingly obvious, the students of all ages put forward more requirements. The stage of college students is the stage of improving their physical quality. To meet the requirements of the present stage, it is particularly important to develop the physical quality of college students. Nearly 1,000 female college students accepted the Survey Report "student physical health standards". Based on the analysis of the physical quality index levels of the subjects tested, it was found that more than 90 percent of female college students have serious psychological

resistance to sports . The most direct and fundamental reasons for female college students' sports are three psychological behaviors: not high interest, not paying attention to sports knowledge, not attaching importance to sports ability, etc. This cognitive mindset has spread from less to more to the next generation, and more worryingly, many studies have uncovered cardiovascular problems among college students , their physical, psychological, health and mental problems have become the focus of social attention, especially for the female students. The age of female college students is 19-23 years old, and the physical and psychological aspects are still in the stage of maturity. It is necessary to study female college students in order to alleviate all kinds of problems, instruct them to do scientific exercises and get the best results for their health . The physical quality commonly used in tennis includes strength, aerobic endurance, speed, sensitivity and balance ability. Therefore, the influence of tennis on the development of female college students' physical quality can greatly promote their physical development.

## **2. Methodology**

### **2.1 Bibliographic Method**

The method of literature review is to find out the physical quality of female college students through network, library and so on, so as to open up a new way for research.

### **2.2 Lessons Learned**

The experience summary method is to analyze and summarize the accumulated data systematically, and make it have realistic guiding significance.

### **2.3 Theoretical Analysis**

Theoretical analysis is a scientific analysis of the use of theoretical knowledge obtained by the argument, is the highest form of thinking and behavior. In the thought, we define the essence of things, so as to decompose things into parts, characteristics, attributes, relations, and so on, grasp its regularity, adopt theoretical methods, reasonable analysis, so that it has practical significance

### **2.4 Questionnaire Survey**

Questionnaire survey is a kind of survey method to collect and sort out research data in written form, by sending out a concise inquiry sheet to the people under investigation, a method of obtaining material and information indirectly by asking for comments and suggestions on relevant issues.

### 3. Results and Discussion

#### 3.1 *The Effect of Tennis on the Physical Quality of Female College Students*

##### 3.1.1 *Influence of Strength Quality*

Strength quality refers to the ability of the body to overcome internal and external resistance during work. Strength Training in tennis refers to the time when the athletes take part in tennis, serve or hit the ball. The combination of muscle strength and tennis movement technology enables the muscle strength to be transformed into the driving force of hitting the ball forward. While improving muscle strength, it also develops and improves the specific muscle volume and function of the tennis movement directly enhances the training effect. Tennis any movement, must pass through the foot, the leg, the hip, the big arm, the small arm, the wrist this link, therefore carries on the whole body the exercise the form is a very good exercise means to the female university student. According to a large number of research results, the strength training of tennis has a good effect on female college students, can enhance their physical quality and improve their body shape to develop in a good direction. Before and after the training, the female college students' body Weight, BMI and body mass index decreased from 56.22 kg to 52.13 kg, and the average body mass index (BMI) decreased from 20.01% to 19.20%, The body fat percentage decreased from 25% to 23.80%, and the waist and hip circumference decreased from 67 cm to 66 cm, especially the hip, which decreased from 91.46 cm to 87.20 cm, which decreased nearly 5 cm. Therefore, the strength training of tennis can promote the catabolism and metabolism of body fat proportion of female college students, and improve their body shape. It has a good effect on the respiratory system of female college students, and at the same time, it improves the physiological function of the cardiovascular system, not only has a good effect on the body shape and the physiological health, but also improves the technical application ability of female college students, drive the speed of the quality and flexibility of the common development. There are a lot of strength exercises in tennis, and the warming-up exercises for all parts of the body must be sufficient to strengthen the warming-up of all parts of the body. In particular, the above-mentioned foot, leg, hip, arm, forearm, forearm, wrist and other body parts of the exercise time so as not to cause muscle strain, affect interest in sports; Female College students should pay attention to the strength load during the special period, also called Menstrual period. Chinese scholars have studied and determined the changes of sports ability in one menstrual cycle, and found that the Luteal period has the best strength and sports ability, and the menstrual period is the worst, this training method, training volume also have different arrangements, of course, also vary from person to person.

##### 3.1.2 *Effects of Endurance Quality*

Endurance quality refers to the ability to insist on long-term sports. Tennis can develop endurance quality well. Because tennis is the most important process of

movement, and exercise for a long time, the amount of exercise, a game will last for six or seven hours, on the cardiopulmonary function requirements. For the ability of not too strong female students but the most important aerobic oxidation system of energy, although the release of energy slow, but the energy generated by a large, adequate compensation of anaerobic exercise caused by fatigue. By training the participants for 18 weeks and recording the time required for the 50m \* 8 return run, the endurance time of the female students in the Physical Education Department was reduced from 124s to 117s, and the endurance time of the female students in other departments was reduced from 135 to 127, It's a good indication of the change in endurance fitness: all the girls had an increase in endurance fitness, and endurance was the most obvious increase compared to other physical fitness, and there was a big difference compared to the pre-exercise data. This shows that tennis has a good effect on the endurance quality of female college students, compared with the endurance data of male students, the female students are more suitable to practice tennis, and the long-term exercise has greatly improved the cardio-pulmonary function of female students, delay the body fatigue, and then improve the endurance quality. Tennis is played for a long time, if a lot of sports are played for a long time, instead of improving the heart and lung function, it is easy to create a counterproductive effect on the physical, heart and lung function of women's universities. Sports Medicine also requires that proper exercise be followed and gradual progress is required, if any adverse reaction is found, we should stop the exercise immediately, so as not to cause sports injury and affect more female college students' resisting mood; the endurance load and strength of female college students in Menstrual period are different, the changes of sports ability in one menstrual cycle were studied, and it was found that the endurance sports ability in luteal phase decreased. Sports Medicine put forward a request for the endurance load of female college students in special period: less but better exercise endurance.

### ***3.2 The Influence of Tennis on Other Physical Quality of Female College Students***

#### ***3.2.1 Impact of Speed Quality***

The speed quality refers to the body's ability to move quickly in a short period of time. Speed includes reaction, movement and movement speed. Tennis is a varied sport, a game, facing a changing field, different opponents, and the speed and rotation of the ball are also different, so according to different conditions to make different adaptation choices, more must have an agile reaction speed, the fast movement speed, the accurate movement speed, the three mutually combine, complement each other. The data from the 50-meter run show that the speed quality of female students has been improved to a great extent. The speed quality of female students in the Department of Physical Education has been reduced from the original average value of 10.3 s to 7.5 s The average speed of female students in other departments decreased from 11.5 s to 9.5 s, which showed that the physical quality of female students in sports departments was relatively good. The tennis teaching course is different from the competition, the movement load and the movement form

are small, for the female university student, even the beginner all emphasizes the reaction speed and the movement speed specially, according to the curriculum arrangement and the need slowly enhances the movement speed, increase the load, is conducive to increasing female students' interest in learning, not just study on the generation of boredom. The fast reaction of tennis and the requirement of active braking have greatly improved the speed quality of female college students. The results showed that although the speed of female students was worse than that of male students, the speed of female college students in the menstrual cycle increased, which could increase the speed of exercise moderately .Sports Medicine also stated that girls in the menstrual period must be moderate exercise, if only to improve the speed of quality, but ignored the menstrual cycle, long down easy to cause menstrual disorders, even life-long impact.

### **3.2.2 The Influence of Sensitivity**

Sensitive quality literally means fast, accurate, steady three words, in tennis players in the fast, accurate, steady completion of the hitting action has the ability. To test the sensitivity of the participants by using the return run to pick up the ball (the return run is the best way to test the sensitivity of tennis by using the speed of reaction and the ability to judge the rationality of the movement in time and space) . The combination of this method in the course of training can effectively improve the enthusiasm of girls, cultivate their sports interests, tap their sports potential, and also greatly improve their sensitivity. In the course of tennis, because the ball speed is faster, reaction time is relatively less, all parts of the body are required to handle space, time, and the rhythm of hitting the ball correctly and quickly, to complete all kinds of switching movements reasonably, effectively and quickly. The results of long-term exercise show that the girls' sensitivity has increased, the female students in the Department of Physical Education are more obvious, and their thinking mode and behavior habits have changed correspondingly. They are full of spirit and temperament, quick in action and active in inner thinking. After 18 weeks of training, the girls' agility is greatly improved. This shows that the use of various movements in tennis, exercise intervention, on the sensitivity has a significant effect. The research shows that the female college students in Menstrual period have more sensitive diathesis, and strength, endurance, flexibility and speed can all be enhanced.

### **3.2.3 Impact of Flexibility**

Flexibility refers to the ability of joints to move in different directions and the ability of muscles and ligaments to stretch. In tennis we used a vertical forward bend to measure flexibility, through 18 weeks of training, measurement before and after the results are as follows, the physical flexibility of girls from 8 to 11 other girls from 8 to 12, . According to the data, the female students in the Department of Physical Education are not as flexible as those in other departments. This is because the female students in the Department of Physical Education have been exposed to sports for a long time. Although the starting point is the same, after the same training, other departments of female flexibility increased faster, more obvious, just enough

that the importance of female college students to learn tennis and influence. Secondly, the overall increase in female students' pliability is not obvious. Generally speaking, the sensitive period of pliability begins in childhood, and early training should be emphasized, while the development of college students' pliability has already passed the sensitive period, and the increase is not obvious, so in the exercise time to pay attention to all-round flexibility training, to avoid sports injuries. In the Menstrual period of female college students, the flexibility of the relative enhancement, of sports medicine requires moderate exercise, so as not to cause physiological burden, affect the interest of learning tennis.

#### 4. Conclusion

- 1).Tennis has a significant impact on the strength of female college students, the proportion of body parts significantly increased, body shape change, female students good foundation, increase faster, female students low foundation, increase relatively obvious;
- 2). Tennis Has an Obvious Effect on the Speed Quality of Female College Students, Especially the Increasing Effect of Female Students At the Basic Level
- 3). Tennis Has a Significant Effect on the Endurance Quality of Female College Students;
- 4). Tennis Has No Obvious Effect on Female College Students' Pliability, But It Has Been Improved in General.

#### References

- [1] Tong peng Wei . Follow-up investigation on physical quality and Functional Status of Female College Students. (D) Qingdao Agricultural University, May 2009
- [2] Ministry of Education. The results of the 2005 national survey on students' physical fitness and health were published. (Z)in 2017
- [3] Ministry of Education. Analysis of the influence factors of strength training on Girl Students Physical Quality(D). Shanghai. Shanghai International Studies University, 2014
- [4] Jing Li. A probe into the physical quality training of juvenile female tennis players. (D). Hubei Sports Science and technology, 2018.27(1)
- [5] Tong Zhang. Zhen Li, a study of physical fitness training for amateur tennis players. Guangdong Business School China Business School.( J). 2018(1)