

Analysis of the influence of national aerobics training on the physical health of female college students

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Abstract: National aerobics is a comprehensive sports event that combines the elements of aerobics and dance with the characteristics of many national groups in China. It has the characteristics of diversified forms, high development value, strong sports innovation, and high sports entertainment. The article focuses on the analysis of the influence of national aerobics on the body shape, human function and physical quality of female college students, in order to encourage female college students to carry out targeted national aerobics training, and to guide female college students to cultivate good sports values, enhance the physical quality of female college students to improve their body image and help female college students form a good living habit of loving sports.

1. Introduction

In recent years, due to the heavy academic burden of college students, insufficient attention to physical health, and lack of sports resources in colleges and universities, the physical quality of female college students has been continuously declining. The specific manifestations are: increased body fat rate, physical strength, physical endurance, physical flexibility degree is on a decreasing trend. If things go on like this, many female college students are in a sub-healthy state, and even some female college students have physical and psychological problems, which are mainly manifested in decreased immunity, easy physical fatigue, anxiety and tension, and low learning efficiency. Therefore, helping female college students to strengthen physical exercise and improve their physique to meet the requirements of national economic and social development has become an urgent problem to be solved. This paper firstly introduces national aerobics into the university, adopts random sampling method to carry out national aerobics training for female college students, and conducts a comparison before and after training, in order to explore the far-reaching influence of national aerobics on the physical and mental state, physical mechanism and overall quality of female college students.

2. Research Objects and Research Methods

Research subjects: 50 female college students aged 19-24 were randomly selected as the research subjects, including 2 19-year-olds, 15 20-year-olds, 6 21-year-olds, 13 22-year-olds, and 14 24-year-olds.

Research methods: 50 female college students were randomly selected from colleges and universities to perform national aerobics exercises 3-5 times/week, 30-60min/time for one academic year. Provide the basis for practice and theoretical guidance; analyze and compare the body shape data of female college students before and after training through the experimental method; through the data statistics method, use EXCEL to conduct data statistics, if $P < 0.01$, the data is extremely significant; if P value < 0.05 indicates that the data is significantly different; if $P > 0.05$, it indicates that the data is not significantly different.

3. Test Results and Analysis

3.1 Analysis of the Influence of National Aerobics on the Body Shape of Female College Students

As shown in Table 1, it has been proved by experiments that national aerobics can significantly improve the body shape of female college students, such as body weight, body mass index, waist circumference, hip circumference, sebum thickness and other indicators. BMI is an indicator closely related to the total body fat mass, and it is also a standard commonly used internationally to judge the level of body fat and thinness. The higher the BMI index, the higher the level of body fat. If a person is overweight, may induce various cardiovascular and cerebrovascular diseases. And through 30-60 minutes of national aerobics training, all parts of the female college students' body were fully mobilized, allowing the female college students to carry out sufficient aerobic exercise, which promoted metabolism, consumed excess body fat, and reduced the BMI index of female college students enables female college students to achieve the goal of losing fat and fitness. At the same time, national aerobics training female college students' body flexibility can make their posture correct, their waist and abdomen more flexible and powerful, and show the curvaceous beauty of the human body^[1]. Therefore, long-term targeted national aerobics training in colleges and universities plays an important role in correcting the bad body shape of female college students. Meanwhile, a beautiful body shape also enhances the self-confidence of female college students.

Table 1 Effects on the body shape of the research subjects

Test content	Before training	After training	P value
Weight (kg)	55.05 ±2.15	53.19 ±2.47	<0.05
BMI/(kg•m ⁻²)	21.14 ±2.45	20.76 ±2.29	<0.05
Bust (cm)	83.11 ±2.05	84.01 ±2.67	>0.05
Waist circumference (cm)	72.59 ±2.51	68.91 ±2.28	<0.01
Hip circumference (cm)	86.91 ±3.02	88.02 ±3.07	<0.05
Thigh circumference (cm)	54.14 ±4.06	53.08 ±3.72	<0.01
Calf circumference (cm)	38.16 ±3.76	36.07 ±3.45	<0.05

Upper arm (cm)	21.15±2.69	22.41±2.20	<0.01
Psoas sebum thickness (mm)	13.19±1.99	14.39±0.71	<0.01
Abdominal muscle sebum thickness (mm)	24.45±4.56	21.33±3.15	<0.05
Scapular muscle sebum thickness (mm)	18.43±4.50	13.14±3.12	<0.05

3.2 Analysis of the Influence of National Aerobics on the Physical Function of Female College Students

As shown in Table 2, studies have shown that national aerobics can effectively improve the cardiorespiratory function of female college students. The resting heart rate of female college students after national aerobics training is reduced, the heart contraction and blood supply capacity are enhanced, and the oxygen reserve and breathing intensity of the lungs are also improved. It can promote the health of its cardiopulmonary function, blood circulatory system, and endocrine system, and reduce the risk of cardiovascular and cerebrovascular and respiratory diseases ^[2].

Table 2 Effects on the physical function of the research subjects

Test content	Before training	After training	P value
Heart rate (times/min)	77.53±1.37	73.15±2.56	<0.05
Breathing (times/min)	17.3±0.21	16.2±0.43	<0.05
Vital capacity (ml)	2432.79±434.22	2688±448.98	<0.05
Systolic blood pressure (mmhg)	110.5±2.32	113.7±1.78	<0.05
Diastolic blood pressure (mmhg)	77.6±2.12	73.5±1.70	<0.05

3.3 Analysis of the Influence of National Aerobics on the Physical Quality of Female College Students

As shown in Table 3, after one academic year of national aerobics training, female college students have achieved a certain degree of improvement in grip strength, body flexibility, waist and abdomen ability, upper and lower arm strength, and whole body explosive power. During the exercise of national aerobics, the strength of the arms, shoulders, waist and abdomen, and legs of female college students is trained. While shaping the body curve, it also strengthens the coordination and balance of various parts of the body, including a large number of jumps, the movement also strengthens the female college students' leg muscle fibers, improves the explosive strength of the muscles, and enhances the female college students' bone density and blood circulation. Because the muscles and bones of female college students are not yet mature, the stretching action of national aerobics can also enhance the flexibility of female college students and promote the growth of muscles and bones of female college students ^[3].

Table 3 Effects on the physical fitness of the research subjects

Test content	Before training	After training	P value
Grip Strength (kg)	43.58 ± 2.33	45.58 ± 2.64	<0.05
Sit-ups (pcs/min)	37.33 ± 4.67	41.22 ± 2.32	<0.05
Sitting forward flexion (cm)	18.23 ± 5.89	22.01 ± 4.67	<0.05
Standing long jump (cm)	166.99 ± 13.89	171.01 ± 14.54	<0.05

In addition to improving female college students' body shape, adjusting their physical function, and enhancing their physical fitness, national aerobics also promotes the improvement of female college students' endurance quality and artistic accomplishment. In the process of national aerobics training, through beautiful and rhythmic music, it has a comprehensive stimulating effect on the senses of female college students. At the same time, it is also possible to give full play to the creativity and imagination of female college students according to the different degrees of perception of national beauty of female college students, and organize them to personalize the creation and arrangement of the movements of national aerobics, so that female college students can gain a sense of achievement and satisfaction when train in national aerobics, enhance their self-confidence, and cultivate their awareness of lifelong sports ^[4].

4. Conclusions

National aerobics is an important carrier to spread Chinese national culture, and a powerful measure to cultivate the lifelong sports awareness of Chinese college students. It does not limit the age and venue of the participants, with dance movements and wonderful music with national characteristics, it has nurtured the literary sentiment of female college students, and greatly enhanced the enthusiasm of female college students to exercise independently, effectively improved the body shape of female college students, optimized the physical function of female college students, improved the physical quality of female college students, and made female college students in flexibility, agility, heart and lung function, motor response speed, explosive power, muscular endurance and other aspects have been significantly improved, and at the same time, the weight and body fat of female college students have been reduced, which has a good effect on the physical and mental health of female college students.

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