

RESEARCH ON THE INFLUENCE OF VOLLEYBALL OPTIONAL COURSE ON COLLEGE STUDENTS' PHYSICAL HEALTH



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PESQUISA SOBRE A INFLUÊNCIA DO CURSO OPCIONAL DE VOLEIBOL SOBRE A SAÚDE FÍSICA DOS ESTUDANTES UNIVERSITÁRIOS

ESTUDIO SOBRE LA INFLUENCIA DEL CURSO OPCIONAL DE VOLEIBOL EN LA SALUD FÍSICA DE LOS ESTUDIANTES UNIVERSITARIOS

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ABSTRACT

Objective: To explore the influence of volleyball elective course on college students' physical health. **Methods:** In this study, 160 college students (n=89, female (n=71)) of the 2019 series of School T were selected as research subjects, aged 19-21 years. Through literature review, interview, measurement and mathematical statistics, this paper tests students' strength quality, speed quality, endurance quality and flexibility. **Results:** the average index of 1000 meters before and after the elective volleyball course for male students; average index of 800 meters before and after the elective volleyball course for female students; The comparison of long jump and average index of 50 meters between male and female students before and after the elective volleyball class shows a significant statistical difference ($P < 0.05$). However, the comparative mean index of the data before and after the pull-up, sit-up and sit-up flexion elective class after volleyball shows no statistical difference. **Conclusion:** The study demonstrates that training in volleyball class has a positive impact on the physical health of college students. **Level of evidence II; Therapeutic studies - investigation of treatment results.**

Keywords: Volleyball; Student's Health; Quality of Life.

RESUMO

Objetivo: Explorar a influência do curso opcional de voleibol sobre a saúde física dos estudantes universitários. **Métodos:** Neste estudo, 160 estudantes universitários (n=89, feminino (n=71)) da série 2019 da Escola T foram selecionados como objetos de pesquisa, com idades entre 19-21 anos. Através de revisão de literatura, entrevista, medição e estatísticas matemáticas, este trabalho testa a qualidade da força dos estudantes, a qualidade da velocidade, a qualidade da resistência e a flexibilidade. **Resultados:** O índice médio de 1000 metros antes e depois do curso eletivo de voleibol para estudantes masculinos, índice médio de 800 metros antes e depois do curso eletivo de voleibol feminino, a comparação do salto em distância, o índice médio de 50 metros entre estudantes masculinos e femininos antes e depois da aula eletiva de voleibol apresentaram uma significativa diferença estatística ($P < 0,05$). Entretanto, o índice médio comparativo dos dados antes e depois da aula eletiva de pull-up, sit-up e flexão sentada após o voleibol não apresenta diferença estatística. **Conclusão:** O estudo demonstra que o treinamento na aula de vôlei tem um impacto positivo sobre a saúde física dos estudantes universitários. **Nível de evidência II; Estudos terapêuticos - investigação de resultados de tratamento.**

Descritores: Voleibol; Saúde do Estudante; Qualidade de Vida.

RESUMEN

Objetivo: Explorar la influencia del curso optativo de voleibol en la salud física de los estudiantes universitarios. **Métodos:** En este estudio, se seleccionaron como sujetos de investigación 160 estudiantes universitarios (n=89, mujeres (n=71)) de la serie 2019 de la Escuela T, de entre 19 y 21 años. A través de la revisión de la literatura, la entrevista, la medición y la estadística matemática, este trabajo pone a prueba la calidad de la fuerza, la calidad de la velocidad, la calidad de la resistencia y la flexibilidad de los estudiantes. **Resultados:** el índice medio de 1000 metros antes y después del curso de voleibol optativo para los alumnos varones; el índice medio de 800 metros antes y después del curso de voleibol optativo para las alumnas; la comparación del salto de longitud y el índice medio de 50 metros entre los alumnos varones y las alumnas antes y después de la clase de voleibol optativo muestra una diferencia estadística significativa ($P < 0,05$). Sin embargo, el índice medio comparativo de los datos antes y después de la clase electiva de pull-up, sit-up y flexión sentada después del voleibol no muestra ninguna diferencia estadística. **Conclusión:** El estudio demuestra que el entrenamiento en la clase de voleibol tiene un impacto positivo en la salud física de los estudiantes universitarios. **Nivel de evidencia II; Estudios terapéuticos - investigación de resultados de tratamiento.**

Descritores: Voleibol; Salud del Estudiante; Calidad de Vida.



INTRODUCTION

The Standard of Students' Physical Health (hereinafter referred to as the Standard) is an educational means to promote the healthy development of students' physical fitness and encourage students to actively take physical exercise. At present, colleges and universities regard the implementation of "Standards" as an important content of school physical education, and actively carry out propaganda and encouragement, testing and evaluation of students. However, how to improve students' physical health level and make students meet the requirements of the Standard faster and better is still in the initial exploration stage.^{1,2} At present, the main indicators for testing physical fitness in colleges and universities in China are divided into three categories, the first is the indicators of body shape, physical fitness, physical function and athletic ability, etc. After research, physical activity has a great influence on the body. Therefore, physical fitness usually refers to the research field jointly advocated by sports, health and education departments.

With the deepening of the reform of physical education, roller skating in colleges and universities has become a new teaching content and has been widely carried out, but the promotion effect of roller skating teaching on students' physical health deserves further in-depth study.³ This paper mainly compares the students' physique in volleyball elective courses, studies and analyzes the differences of volleyball elective courses on college students' physical quality from three aspects: body shape, physical function and physical quality, and then puts forward the teaching contents and methods of improving physical education elective courses.

Research objects and methods

Object of study

160 students (male (n=89, female (n=71)) in volleyball elective course of Grade 2019 in T School were taken as the research objects, aged 19-21 years.

Research technique

By consulting the domestic literature, monographs and relevant policies and regulations on physical education, the literature is classified and summarized.

For the design and control of this research experiment, the selection of research objects, research methods and precautions, etc., several teachers engaged in special physical education courses and tutors who study the physical health of college students were interviewed successively, asking them for the latest research status of college physical education elective courses and physical health of college students, and seeking the opinions of experts on selecting test indexes that can reflect physical health.

According to the Ministry of Education's "Regulations on the Implementation of Students' Physical Health Standards in Colleges and Universities", the students who participated in the elective courses were tested twice, the first time before the elective courses and the second time after the one-year elective courses.⁴ According to the methods and test rules stipulated in the Standard, the test items include height and weight, grip strength, vital capacity, body mass index, sitting forward flexion, standing long jump, and step test. According to the scoring method stipulated in the Standard, everyone's physique is comprehensively scored.

By using SPSS13.0 software package, this paper deals with and analyzes the results of students' physical health test in volleyball elective course.

RESULT

Analysis of students' attitude towards volleyball elective course teaching

Students' attitude towards volleyball and volleyball teaching is directly related to the effect of volleyball teaching. Only by having a high degree of love for volleyball and volleyball teaching can students learn

and exercise their skills wholeheartedly. Only in this way can students have a correct understanding of the formation of volleyball and improve their volleyball skills continuously.

According to Figure 1, students who like volleyball very much account for 81.52% of the total, 13.96% of the average and 4.52% of the total. It can be seen from this that most of the students who choose volleyball have a high degree of preference for volleyball, which reflects their high enthusiasm for volleyball.

In the aspect of enjoying volleyball class very much, 88.29% of the students think that it is very consistent and consistent, and 9.88% think it is average. It can be seen from this that most students like volleyball lessons very much.

In the aspect that taking volleyball course is of great significance to your all-round development of body and mind, 77.34% of the students think that it is very consistent and consistent, 19.67% think it is fair, and 2.99% think it is not. It can be seen from this that most students think that volleyball class plays a great role in their all-round development, which shows that most students realize that volleyball plays a very positive role in improving their physical quality, psychological quality and social adaptability.

Body shape analysis

Height can be used to assess teenagers' physical development and health. Height is influenced by heredity, nutrition, environment, living habits, sports and other factors. Body weight can be used as one of the important indexes to reflect and measure a person's health, and generally reflects the symmetry of a person's body together with height.⁵ Body mass index (BMI) is an important index to evaluate the development level, nutritional status and body symmetry of human body, which can indirectly reflect the body composition of human body. When it is necessary to compare and analyze the health effects of a person's weight on people of different heights, value is a neutral and reliable indicator.

It can be seen from the Table 1 that the height, weight and kimono indexes of boys and girls are slightly higher than those before the experiment, but there is no statistically significant difference between the three indexes before and after the experiment (P values are all greater than 0.05), which shows that the body shape of college students has not changed much after learning tennis elective course for one semester.

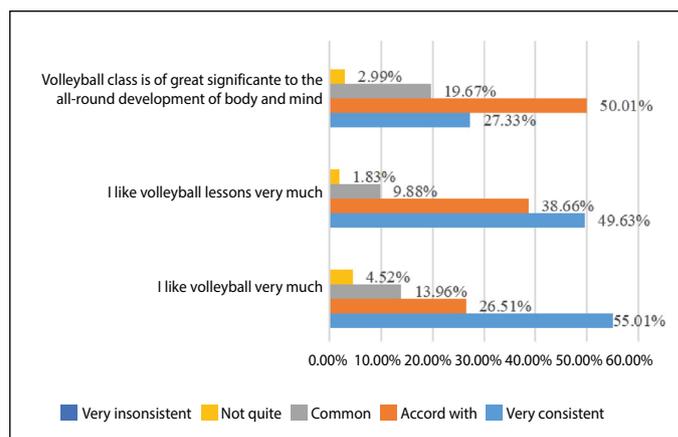


Figure 1. Analysis of students' attitude.

Table 1. Experimental results of body shape before and after the experiment.

Index	Gender	Before the experiment	After the experiment	T test
Height (cm)	Man (n=89)	173.22±6.25	174.51±6.27	P>0.05
Weight (kg)		68.93±12.88	69.88±12.92	P>0.05
BMI		22.81±2.91	22.84±2.37	P>0.05
Height (cm)	Woman (n=71)	161.08±4.52	162.82±4.52	P>0.05
Weight (kg)		54.19±7.15	54.29±7.62	P>0.05
BMI		21.33±2.65	21.83±2.19	P>0.05

Analysis of the influence of volleyball elective course on college students' physical quality

Physical fitness, which usually refers to the basic ability of human muscle activity, is a comprehensive reflection of the functions of various organ systems in muscle work.⁶ Physical fitness generally includes strength, speed, endurance, flexibility, sensitivity and so on. Physical fitness is often reflected in people's life, study and work, and naturally in physical exercise. The quality indexes tested in this study are strength quality (grip strength, standing long jump, one-minute sit-up), speed quality (50m running), endurance quality (800m running, 1000m running), and flexibility quality (sitting forward).

According to the data in Table 2, the average index of 1000 meters before and after the volleyball elective course for male students; Average index of 800 meters before and after girls volleyball elective course; The comparison of standing long jump and 50-meter average index between male and female students before and after volleyball elective class shows that the difference is obvious; The standard deviation of each data was $P < 0.05$ (significant difference). However, the average index of the data before and after the elective course of pull-up, sit-up and sitting forward flexion volleyball is not very obvious, and the standard deviation of these data is $P > 0.05$ (no significant difference).

DISCUSSION

Most of the students who take volleyball courses have a certain understanding and hobby of volleyball and have a certain foundation of volleyball, so these students will actively choose volleyball elective courses and be more active in the learning process.⁷ In the body shape indexes tested, the height, weight and indexes of boys and girls are slightly higher than those before the experiment, but there is no statistically significant difference between the three indexes before and after the experiment ($P > 0.05$), which shows that the body shape of college students has not changed much after learning tennis elective course for one semester.

In volleyball elective course teaching, the teaching content is generally some basic skills and knowledge, and the students are all ordinary professional students, whose knowledge and skill level are not very high. Because most teachers are engaged in volleyball major and have good knowledge and skill level, their knowledge and skill level is easy to meet daily teaching. Every class teacher should arrange volleyball training with corresponding load intensity, and complete every full ice-pedaling exercise needs corresponding explosive force and ice-pedaling speed; The intensity of volleyball arranged by teachers requires lasting endurance for students to finish. The research in literature points out that jogging can reduce the weight of female college students, lower the level of female students, and play a significant role in maintaining and improving physical health. As volleyball is an advantageous traditional event in

schools, it also pays more attention to the development of volleyball, so the investment in volleyball is larger, which makes volleyball have better hardware conditions, which can better meet the needs of teaching.

The data show that volleyball class has a certain influence on pull-ups, sit-ups and sit-ups of college students, but it is not very obvious. At present, the physical health of college students is not optimistic, which is obviously related to the lack of sports skills, exercise interest and hobbies of college students. Physical education plays an important role in promoting college students' physical health, mental health and social adaptability. Students' self-practice time in class is relatively short, which results in the relative lack of the intensity of new classes. In addition, students' twice-a-week exercise frequency and some college students' bad living habits can be imagined that their body shape changes are not obvious.

Suggestion

Teachers of tennis elective courses are required to optimize the classroom structure, not only to learn tennis skills, but also to pay attention to the training of students' lower limb strength. There are many ways to improve the explosive quality of lower limbs. If combined with tennis elective course, it will be easily accepted by college students. Volleyball elective courses in colleges and universities should build a comprehensive evaluation system of volleyball elective courses including evaluation contents, evaluation methods and evaluation objects.

To strengthen teacher training and improve teachers' professional level, teachers can communicate with themselves or study in short-term training courses, improve teachers' professional knowledge and special skills, and accumulate experience constantly. Teachers not only specialize in teaching in class, but also install corresponding teachers to give voluntary guidance in their spare time.

In the teaching of elective courses, teachers should not only combine students' interests and hobbies, but also understand the load differences and sports characteristics of different projects. While teaching technology and skills, teachers should make up for the shortcomings caused by project limitations and effectively improve students' physical health.

CONCLUSION

The above research shows that the less obvious influence of tennis elective course on college students' physique is the explosive force of lower limbs in strength quality, displacement speed and flexibility quality in speed quality, so attention should be paid to these exercises in tennis elective course.

The average indexes of 50m, 1000m (male), 800m (female) and standing long jump of college students are obviously improved before and after volleyball elective class, but there is no big change in sit-ups, pull-ups and sitting body flexion before and after teaching. It can be seen that the volleyball elective course has obviously improved the strength,

Table 2. Comparison of average and standard deviation of physical fitness indexes of college students before and after experiment.

Gender	Total number of people	TestTime	1000m/s	800m/s	pull-up/n	Abdominal curl /n	Standing long jump/cm	50m/s	Sit and reach/n
Man	89	Before the experiment	241.02±14.02		5.66±2.01		230.02±18.66	7.23±0.44	14.96±4.21
		After the experiment	223.66±13.05		5.69±2.34		240.61±18.99	7.03±0.36	16.38±19.02
		U	2.014		0.052		2.113	-1.263	1.882
		P	<0.05		>0.05		<0.05	<0.05	>0.05
Woman	71	Before the experiment		251.33±10.99		29.63±3.96	155.39±14.62	9.06±0.55	17.99±5.22
		After the experiment		235.82±10.63		30.26±4.11	167.38±14.02	8.02±0.43	18.06±6.51
		U		2.350		0.962	1.762	-2.013	0.713
		P		<0.05		>0.05	<0.05	<0.05	>0.05

speed and endurance qualities of 50m, 1000m (male), 800m (female) and standing long jump, but has no obvious influence on the upper limb strength, waist and abdomen strength and flexibility qualities of sit-ups, pull-ups and sitting body flexion.

The teaching goal of volleyball elective course is not comprehensive. The teaching method of volleyball elective course is outdated and

can not meet the learning needs of students. The teaching content of volleyball elective course is not comprehensive. Teaching evaluation of volleyball elective course is unreasonable.

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