

INVESTIGATION TO EXERCISE STATUS OF UNIVERSITY STUDENTS IN THE LATE PHASE OF THE COVID-19 EPIDEMY



ORIGINAL ARTICLE
ARTIGO ORIGINAL
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INVESTIGAÇÃO SOBRE A SITUAÇÃO DO EXERCÍCIO FÍSICO DOS ESTUDANTES UNIVERSITÁRIOS NA FASE FINAL DA EPIDEMIA DO COVID-19

INVESTIGACIÓN SOBRE EL ESTADO DEL EJERCICIO FÍSICO DE LOS ESTUDIANTES UNIVERSITARIOS EN LA ÚLTIMA ETAPA DE LA EPIDEMIA DE COVID-19

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ABSTRACT

Introduction: The outbreak of COVID-19 has changed the traditional way of teaching physical education. **Objective:** Investigate the current status of physical exercise in college students after the COVID-19 outbreak. **Methods:** Students from 32 colleges were interviewed, totaling 1074 valid questionnaires. **Results:** Under the influence of the COVID-19 epidemic, many students chose their exercise methods according to their needs and environmental conditions, spontaneously completing extracurricular physical training goals healthily in a safe environment. Exercising to improve physical fitness, strengthen immunity, and minimize disruption of the COVID-19 epidemic is a common concern among students. **Conclusion:** Most students' activities have changed significantly, and university physical education teachers should provide tailored guidance in exercise to ensure health and safety, in addition to promoting post-workout teaching based on current needs ensuring health and safety while promoting the benefits of physical education teaching in extra-class workouts. **Level of evidence II; Therapeutic studies - investigation of treatment results.**

Keywords: Covid-19; Student Health; Exercise.

RESUMO

Introdução: O surto de COVID-19 mudou a forma tradicional de ensinar educação física. **Objetivo:** Investigar a situação atual do exercício físico em universitários após a epidemia do COVID-19. **Métodos:** Estudantes de 32 faculdades foram entrevistados, totalizando 1074 questionários válidos. **Resultados:** Sob a influência da epidemia de COVID-19, muitos alunos escolheram seus próprios métodos de exercícios de acordo com suas necessidades e condições ambientais, completando espontaneamente os objetivos do treino físico extra-curricular, de forma saudável em um ambiente seguro. Exercitar-se para melhorar a aptidão física, fortalecer a imunidade e minimizar a interrupção da epidemia de COVID-19 é uma preocupação comum entre os estudantes. **Conclusão:** A maioria das atividades dos alunos mudaram significativamente e os professores universitários de educação física devem fornecer uma orientação adaptada em exercícios para garantir saúde e segurança, além da promoção do ensino no pós-treino com base nas necessidades atuais garantindo saúde e segurança, além de promover os benefícios do ensino da educação física nos treinos extra-classe. **Nível de evidência II; Estudos terapêuticos - investigação dos resultados do tratamento.**

Descritores: Covid-19; Saúde do Estudante; Exercício Físico.

RESUMEN

Introducción: La irrupción del COVID-19 cambió la forma tradicional de enseñar educación física. **Objetivo:** Investigar la situación actual del ejercicio físico en los estudiantes universitarios tras la epidemia de COVID-19. **Métodos:** Se entrevistó a estudiantes de 32 universidades, con un total de 1074 cuestionarios válidos. **Resultados:** Bajo la influencia de la epidemia COVID-19, muchos estudiantes eligieron sus propios métodos de ejercicio según sus necesidades y las condiciones del entorno, completando espontáneamente los objetivos del entrenamiento físico extracurricular de forma saludable en un entorno seguro. Hacer ejercicio para mejorar la forma física, fortalecer la inmunidad y minimizar la interrupción de la epidemia de COVID-19 es una preocupación común entre los estudiantes. **Conclusión:** La mayoría de las actividades de los estudiantes han cambiado significativamente y los profesores de educación física de la universidad deben proporcionar una orientación adaptada al ejercicio para garantizar la salud y la seguridad, además de promover la enseñanza posterior al ejercicio en función de las necesidades actuales que garanticen la salud y la seguridad, y promover los beneficios de la enseñanza de la educación física en los ejercicios fuera de clase. **Nivel de evidencia II; Estudios terapéuticos - investigación de los resultados del tratamiento.**

Descriptorios: Covid-19; Salud del Estudiante; Ejercicio Físico.



INTRODUCTION

At the end of 2019, the covid-19 epidemic had a great impact on people's lives. Due to the rapid spread of covid-19 epidemic, many aggregated cases have been formed, and some people have caused the virus transmission without home isolation. Under the influence of covid-19 epidemic, physical education teaching methods are changing, and teaching media are also changing.¹ Online physical education has many advantages, but there are also many disadvantages. Covid-19 epidemic has changed the traditional physical education teaching methods, which will have additional tests on teachers, and students will also cause psychological changes in the process of home exercise.²

In the teaching process, physical education teachers formulate physical education teaching objectives and courses according to physical education teaching standards, which are embodied in the selection and formulation of physical education teaching contents, the design of teaching time, the selection of physical education teaching methods and techniques, and the guidance of physical education teaching, so as to make students have better physical quality and stronger learning ability. College students have strong self-awareness and autonomy, which is easier to organize and manage.³ To sum up, teachers are required to design and evaluate teaching design in teaching, and evaluate teaching according to students' sports stage. Colleges and universities are rich in sports resources. They have a variety of choices in regional facilities and curriculum arrangement, and can carry out a variety of teaching. In recent years, with the continuous development of economy, people have more free time to participate in sports. As the main body of physical education in Colleges and universities, the design of teaching activities for students is particularly important. Therefore, this paper studies the physical exercise of college students in the later stage of covid-19 epidemic, and puts forward corresponding improvement strategies for the shortcomings of the current physical exercise, so as to promote the continuous development of College Students' physical education.⁴

METHODS

Type of study

First of all, we should make full use of the research platform of Wanfang library and municipal knowledge library, so as to lay a certain foundation for the research of predecessors' online and offline library. Then use the interview method to communicate with college students and college physical education teachers to determine the research direction of the questionnaire.

Data collection

This paper designs relevant questionnaires through the interview method. From the interview information collection in the early stage, it can be seen that in the later stage of covid-19 epidemic, the teaching forms of schools are different, and students' sports are not limited to physical education classroom, but include classroom teaching and independent exercise after class. Therefore, the questionnaire survey in this paper involves many aspects, taking schools and students as the research object, this paper not only compares the exercise of students in different colleges and universities, but also compares the exercise of different individual students, so as to have a deeper understanding of the exercise of college students in the later stage.

This paper is carried out online through QQ, wechat and other chat tools, collects the questionnaire feedback of college students, and makes statistics on the data obtained based on both students and schools. The study and all the participants were reviewed and approved by Ethics Committee of Xi'an University of Posts & Telecommunications (NO. 20XUPT-021). A total of 1085 questionnaires are obtained, 11 invalid questionnaires

are excluded, and a total of 1074 effective questionnaires are obtained. If the number of students is n, then $n = 1074$, This questionnaire survey involves 32 colleges and universities, so the number of schools is $n = 32$.

RESULTS

Current situation of College Students' physical exercise based on teaching

The physical exercise of college students in the later stage of covid-19 epidemic is composed of two aspects: in class and after class. The physical exercise in class mainly depends on the current physical education curriculum arrangement and actual implementation of colleges and universities. Therefore, this paper carries out relevant research from the perspective of colleges and universities.

As shown in Figure 1, the arrangement of physical education teaching forms in Colleges and universities. At present, many colleges and universities have adopted the combination of various teaching forms according to their actual situation and the wishes of students. Therefore, in the statistics of the arrangement of physical education teaching forms in Colleges and universities, the actual participation of students is selected as the research standard. As can be seen from Figure 1, most students choose the combination of online and offline, accounting for 55.12%. There is little difference between pure online teaching and pure offline teaching, and the intention of offline teaching is slightly higher. Both online and offline teaching have their own advantages. Online teaching has higher security, but there are limitations in terms of venue; Although offline teaching has a certain risk of infection, relatively speaking, the effect of teaching and training is better. Therefore, more colleges and students tend to choose the combination of online and offline according to the actual situation of the current epidemic and their own psychological needs, so as to obtain a safer and more effective physical exercise effect.

(Table 1) shows the content arrangement of physical education courses in different colleges and universities. It can be seen from the

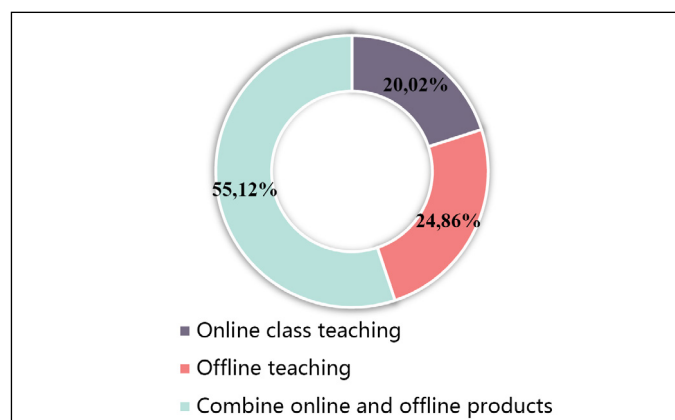


Figure 1. Arrangement of physical education teaching forms in Colleges and universities ($n = 1074$).

Table 1. Content arrangement of physical education courses in different colleges and universities ($N = 32$).

Course content	Number	Proportion
Basketball	32	100.00%
Football	30	93.75%
Volleyball	30	93.75%
Badminton	26	81.25%
Pingpong	23	71.88%
Yoga	17	53.13%
Track and field	32	100.00%
Aerobics	32	100.00%
Taijiquan	32	100.00%
Swim	12	37.50%

Table 1 that the proportion is 100%, that is, the four courses offered by each university in the survey are basketball, track and field, aerobics and Taijiquan. Basketball and track and field, as the main national sports, not only have a good offline teaching foundation, but also have enough theoretical content to support online teaching. Therefore, each university is involved. Aerobics and Taijiquan, due to their flexible venue requirements and small requirements for equipment, can obtain good learning results whether they are studied online according to teachers' videos or trained offline under the guidance of teachers. Therefore, these four courses are also popular during the epidemic. More than 80%, that is, more than 25 colleges and universities have courses such as football, volleyball and badminton. These ball games are popular among students and have a good student base. However, due to certain site restrictions, some schools do not offer relevant courses. Swimming is the course with the lowest proportion. On the one hand, swimming has high requirements for the venue. Some schools are unable to offer relevant courses due to insufficient infrastructure. On the other hand, swimming is also a sport with relatively high infectious risk in the later stage of covid-19. Therefore, some qualified colleges and Universities do not offer relevant courses. It can be seen that in the late stage of covid-19 epidemic, the arrangement of physical education courses in Colleges and universities often makes choices in combination with the actual needs of students, the infrastructure of colleges and universities and the actual situation of the epidemic.

As shown in Figure 2, it shows the score of physical education teaching objectives in Colleges and universities. According to the 5-point scoring method, the more important, the higher the score. Among them, the scores above 4 are "improving physical fitness" of 4.672 points, "promoting mental health" of 4.243 points and "adapting to social needs" of 4.151 points. The scores above 3 were "improving motor skills" of 3.783 and "enhancing the sense of participation" of 3.768. Through the research, it can be seen that under the influence of covid-19 epidemic, the goal of physical education in Colleges and universities focuses more on the physical and mental health of students. Whether it is to "improve the physique" to improve students' immunity or "promote mental health" to minimize the psychological problems caused by long-term closure, it reflects the demand of health first, which also echoes with the current background of the times.

From Table 2, we can have a certain understanding of the current arrangement of physical education teaching intensity in Colleges and universities. Using the scoring method of 5-point system, the greater the intensity, the higher the score. As can be seen from Table 3, with the repeated covid-19 epidemic, the overall intensity of physical education teaching in Colleges and universities shows a state of medium intensity, that is, close to 3 points, increasing by 21.88%, while the teaching intensity with scores of 1, 2, 4 and 5 decreases to varying degrees. Combined with the current physical education teaching mode of combining online and offline in Colleges and universities, it can be seen that with the

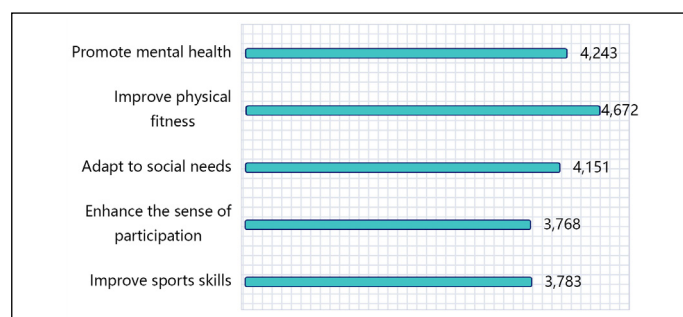


Figure 2. Score of physical education teaching objectives in Colleges and universities (N = 32).

repetition of covid-19 epidemic, medium-intensity exercise is more suitable for the actual needs of current college teaching. Moderate intensity is compatible with students' ability to learn independently according to video, and can also make students achieve good physical fitness effect. Therefore, many colleges and universities have adjusted according to the actual situation to meet the teaching requirements in the later stage of covid-19.

Current situation of College Students' physical exercise after class

College students have a rich extracurricular life, so the research on the current situation of physical exercise of college students should not be limited to the classroom, but also investigate their after-school physical exercise. In this part of the research, college students are selected as the research object, n = 1074.

(Table 3) shows the attitude of college students towards after-school physical exercise. According to the 5-point scoring method, the more important, the higher the score. It can be seen from the research that before covid-19, college students showed a tendency to pay less attention to after-school physical exercise as a whole. Most students thought that exercise was optional. Although it was important, it did not have much impact on life. In the later stage of covid-19, the students' attitude towards physical exercise has been significantly improved. The vast majority of students believe that after-school physical exercise is very important or more important, and only a few people still have a dispensable attitude towards it. It can be seen that after the impact of the epidemic, students' demands for improving their physical quality have increased. However, due to the limitations of various conditions, the in class physical training provided by colleges and universities cannot meet their needs. Therefore, many college students are more inclined to take some physical exercise after class according to their actual needs.

The comparison of the types of physical exercise before and after class is shown in group (Figure 3). Among them, the exercise type of antagonistic ball decreased from 26.35% before covid-19 to 15.08% after covid-19, and the proportion decreased by 11.27%. From the research, it can be seen that the proportion decreased for antagonistic ball games and gyms. The confrontational balls represented by basketball and football have a certain degree of physical contact, so they will have the risk of infection. Many students choose to give up in order to avoid the threat of epidemic infection. As the main place for indoor sports, the gym has poor air, and it is difficult to wear masks in the whole process of sports, so the gym sports have been greatly affected in the epidemic. Non

Table 2. Arrangement of physical education teaching intensity in Colleges and universities (N = 32).

Intensity score	Before COVID-19	After COVID-19	Change range	Change rate
5	4	2	-2	-6.25%
4	8	6	-2	-6.25%
3	11	18	7	21.88%
2	6	4	-2	-6.25%
1	3	2	-1	-3.13%

Table 3. Attitudes of college students towards after-school physical exercise (n = 1074).

Attitude score	Before COVID-19	After COVID-19	Change range	Change rate
5	152	421	269	25.05%
4	236	458	222	20.67%
3	493	121	-372	-34.64%
2	144	62	-82	-7.64%
1	49	12	-37	-3.45%

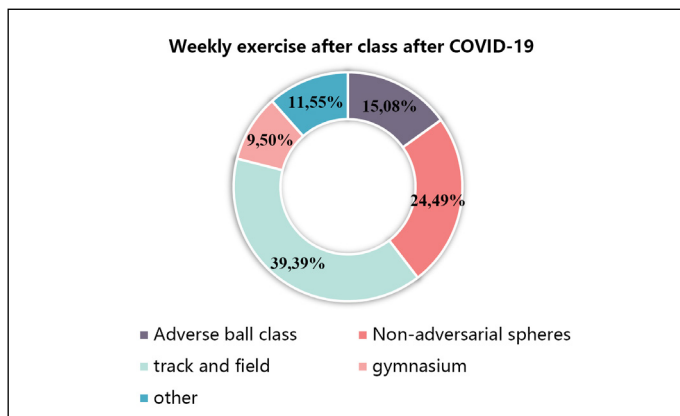


Figure 3. Types of physical exercise activities of college students after class.

antagonistic ball games and track and field sports have been improved to a certain extent. These two kinds of sports are in outdoor open places, and there is a safe distance between people, which can not only reduce the risk of covid-19 infection, but also obtain good sports results, so they are very popular. In addition, there are other types of exercise, including aerobics, road hiking, yoga in dormitories or at home, rope skipping, etc., which have been improved to a certain extent, which also shows that under the influence of covid-19 epidemic, many students will choose their own sports methods according to their actual needs and current environmental conditions, and the sports are more diversified.

DISCUSSION

In terms of task arrangement of physical education teaching activities, there are obvious differences in the arrangement of course homework among physical education teachers in Colleges and universities before and after covid-19 epidemic. Special arrangements need to be made for students who do not carry out high-intensity sports for a long time. We should standardize the task of physical education, do it step by step, and gradually increase the task intensity. There is little gap in teaching methods.⁵

Before and after covid-19 epidemic, most students' attitudes towards sports activities have changed significantly. Many students begin to pay attention to sports activities, but some students still don't pay enough attention to sports activities. In the selection of sports items, there is no significant difference in the selection of College Students' sports teaching activities before and after covid-19 pneumonia, which is basically the same as that before the outbreak of the epidemic. There are great differences in the number and time of students participating in extracurricular physical exercise. After covid-19 epidemic, the number and time of students participating in extracurricular physical exercise have increased significantly. In the post covid-19 period, the difference between students' Self Leadership and sports association club leadership is the most obvious.⁶

Organize physical education and extracurricular activities according to students' individual differences and the law of physical and mental development, so that all students can participate in their favorite class sports activities and sports.

CONCLUSION

It can be seen from the research in this paper that with the continuous repetition of covid-19 epidemic and the implementation of normalized epidemic prevention and control policies, college students have realized the importance of strengthening physique and improving immunity through physical exercise for the prevention of covid-19 epidemic. Therefore, their sports dynamics has been corrected and their sports enthusiasm has been greatly improved. In the face of the increasing demand for physical training but the decline in the amount of physical education teaching in schools, the frequency and intensity of College Students' after-school physical exercise are gradually increasing. Students choose more suitable training methods and organizational forms according to their actual needs and current actual situation, and spontaneously complete the physical training objectives, this has a positive effect on the current epidemic prevention and control.

The author declare no potential conflict of interest related to this article

AUTHORS' CONTRIBUTIONS: The author has made an important contribution to this manuscript. WJ: writing and execution.

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