

INVESTIGATION OF SPORT-RELATED HABITS IN COLLEGE STUDENTS AFTER COVID-19 EPIDEMIC



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INVESTIGAÇÃO SOBRE HÁBITOS RELACIONADOS AO ESPORTE EM ESTUDANTES UNIVERSITÁRIOS APÓS EPIDEMIA DE COVID-19

INVESTIGACIÓN DE LOS HÁBITOS RELACIONADOS CON EL DEPORTE EN ESTUDIANTES UNIVERSITARIOS TRAS LA EPIDEMIA DE COVID-19

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ABSTRACT

Introduction: China's covid-19 epidemic is under control. Universities and schools across the country have resumed physical education classes, but the mental health knowledge of college students in the aftermath of the covid-19 outbreak has not been investigated. **Objective:** To study college students' mental health and sports-related habits after the covid-19 outbreak. **Methods:** This study comprehensively used literature materials, expert interviews, mathematical statistics, and other methods to study the sports-related attitudes and health awareness of college students before and after the outbreak of the new epidemic, examining the health knowledge domain of college students. **Results:** In the survey dimensions related to students' sports knowledge, the highest mean score was for "emotional control" at 3.48, followed by "participation motivation" at 3.41 and "participation attitude" at 3.35. The scores of sports participation attitude, motivation, and sports emotion for males were equal and higher than in females, where the measures of emotional factors and motivation to participate reached significant levels. After the epidemic, the mean scores for students' participation attitude, sports emotion, and motivation to participate in sports exceeded the theoretical mean. **Conclusion:** After the health awareness and prevention work in the community and school network, university students' sports attitudes and awareness improved significantly compared to before the Covid-19 outbreak. **Level of evidence II; Therapeutic studies - investigation of treatment outcomes.**

Keywords: COVID-19; Health Education; Sports.

RESUMO

Introdução: A epidemia de covid-19 em China encontra-se sob controle. Faculdades, escolas primárias e secundárias em todo o país retomaram as aulas de educação física, porém o conhecimento sobre a saúde mental dos estudantes universitários no estágio posterior do surto da Covid-19 não foi investigado. **Objetivo:** Estudar a saúde mental e os hábitos relacionados ao esporte nos universitários depois da epidemia da Covid-19. **Métodos:** Este estudo utilizou de forma abrangente materiais de literatura, entrevistas de especialistas, estatísticas matemáticas e outros métodos para estudar especificamente as atitudes relacionadas ao esporte e a conscientização na saúde dos estudantes universitários antes e depois do surto da nova epidemia, examinando o domínio do conhecimento em saúde dos estudantes universitários. **Resultados:** Nas dimensões da pesquisa relacionadas ao conhecimento esportivo dos alunos, a maior pontuação média foi de "controle emocional" como 3,48, seguida por "motivação de participação" como 3,41 e "atitude participativa" como 3,35. As pontuações de atitude de participação esportiva, motivação e emoção esportiva para os homens foram iguais e maior do que nas mulheres, onde as medidas de fator emocional e motivação para participar atingiram níveis significativos. Após a epidemia, as médias de atitude de participação dos alunos, emoção esportiva e motivação para participar do esporte superaram a média teórica. **Conclusão:** Após o trabalho de conscientização em saúde e prevenção, na rede comunitária e escolar, a atitude esportiva e a conscientização dos universitários foram significativamente aprimoradas em relação aos antecedentes ao surto de Covid-19. **Nível de evidência II; Estudos terapêuticos - investigação dos resultados do tratamento.**

Descritores: COVID-19; Educação em Saúde; Esportes.

RESUMEN

Introducción: La epidemia de covid-19 en China está bajo control. Los colegios y las escuelas primarias y secundarias de todo el país han reanudado las clases de educación física, pero no se ha investigado el conocimiento sobre la salud mental de los estudiantes universitarios en la última etapa del brote de covid-19. **Objetivo:** Estudiar la salud mental y los hábitos relacionados con el deporte en los estudiantes universitarios tras el brote de covid-19. **Métodos:** Este estudio utilizó de forma exhaustiva materiales bibliográficos, entrevistas a expertos, estadísticas matemáticas y otros métodos para estudiar específicamente las actitudes relacionadas con el deporte y el conocimiento de la salud de los estudiantes universitarios antes y después del estallido de la nueva epidemia, examinando el dominio del conocimiento de la salud de los estudiantes universitarios. **Resultados:** En las dimensiones de la encuesta relacionadas con los conocimientos deportivos de los estudiantes, la puntuación media más alta correspondió al



“control emocional” con un 3,48, seguido de la “motivación para la participación” con un 3,41 y la “actitud para la participación” con un 3,35. Las puntuaciones de la actitud de participación deportiva, la motivación y la emoción deportiva de los varones fueron iguales y superiores a las de las mujeres, donde las medidas del factor emocional y la motivación para participar alcanzaron niveles significativos. Después de la epidemia, las puntuaciones medias de la actitud de participación, la emoción deportiva y la motivación para participar en el deporte de los alumnos superaron la media teórica. Conclusión: Tras el trabajo de concienciación y prevención sanitaria en la comunidad y la red escolar, la actitud y la conciencia deportiva de los estudiantes universitarios mejoraron significativamente en comparación con las anteriores al brote de Covid-19. **Nivel de evidencia II; Estudios terapéuticos - investigación de los resultados del tratamiento.**

Descriptores: COVID-19; Educación en Salud; Deportes.

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INTRODUCTION

After the covid-19 outbreak, some literature studies investigated the mental health status of college students in the early stage of the epidemic.¹ The anxiety level of the total sample was 53.49%. Compared with urban students, rural students show more anxiety. There have been reports on the mental health of college students in the early stage of covid-19 outbreak in China, but the mental health knowledge of college students and the mental health status in the later stage of covid-19 outbreak have not been investigated.² At the same time, college students, as the backbone of the implementation of the national strategy, guide students to improve health knowledge, protect health and avoid infection has become the main goal of college work. However, students' participation in sports is not high, and some students have been inactive for a long time.³ According to the results of a regional survey, only 21% of students exercise at a specific time every day. In order to further understand the students' sports attitude and the factors affecting students' Sports during the epidemic, this study selects some students for research to explore the health awareness, sports willingness and sports attitude before and after the epidemic, so as to understand the students' health awareness and sports attitude during the epidemic, and help guide and solve the students' mental health problems.

METHODS

Study type

This paper is based on covid-19, and the main body of the research is college students. The students were investigated by literature and questionnaire, and the students' sports health awareness and sports attitude before and after the epidemic were analyzed. The obtained data are processed by mathematical statistics, and finally the health awareness and sports attitude of college students before and after the epidemic are obtained. The study and all the participants were reviewed and approved by Ethics Committee of Xidian University (NO. 2017FZBD).

Data collection

In order to determine the health awareness and attitude of college students before and after the outbreak of covid-19, the sports awareness of college students before and after the outbreak of covid-19 was analyzed. A questionnaire was created based on the attitude, emotion and motivation of participating in sports. Some contents of the questionnaire are shown in Table 1:

Data analysis

Use Excel to input and summarize the relevant student data collected in the survey, and use SPSS software to analyze the average value, standard deviation and correlation of the summarized data. This paper analyzes the relevant statistical values and college students' sports awareness and mental health knowledge.

Table 1. Questionnaire for university students before and after the outbreak (part).

Topic	Very disagree	Disagree	Unclear	Agree	Very agree
1. Before the epidemic, it is important to be healthy.	1	2	3	4	5
2. Before the epidemic, physical exercise will take the initiative.	1	2	3	4	5
3. After the epidemic, it is important to be healthy.	1	2	3	4	5
4. After the epidemic, physical exercise will be conducted.	1	2	3	4	5
5. Before the epidemic, participate in the sports meeting to consider the views of others.	1	2	3	4	5
6. After the epidemic, participate in the sport will consider the views of others.	1	2	3	4	5
7. Before the epidemic, participate in physical exercise is only to lose weight.	1	2	3	4	5
8. After the epidemic, participate in physical exercise is only to lose weight.	1	2	3	4	5

RESULTS

Analysis of College Students' awareness of physical exercise before and after the epidemic

1. Statistics of College Students' sports awareness and college students' sports awareness of different genders before the outbreak

From table 2, covid-19 shows that in the three dimensions of student sports knowledge, the highest score is “emotional emotion” 3.48, followed by “participation motivation” 3.41 and “participation attitude” 3.35. The scores of these three dimensions are all higher than the theoretical average 3, indicating that the students' Sports emotion level is higher in the sports participation before the outbreak of the new crown and lung disease. Students have higher enthusiasm and enthusiasm, and they will take the initiative to participate in sports. In terms of motivation to participate in sports, the score of 3.41 is higher than the theoretical average, which shows that students have a clear motivation to participate in sports. At the same time, it also shows that students pay more attention to exercise and have a clear goal during school. At the same time, it also shows that students have a certain degree of understanding of sports before the outbreak of the epidemic. However, in terms of

attitude towards participating in sports, the average score is only 3.35, which shows that students pay less attention to participating in sports in their daily life and lack a correct understanding of sports. Although college students recognize the impact of exercise on health, they do not actively participate in exercise.

From table 3, covid-19 can be seen that before the outbreak of new crown pneumonia, three dimensions of sports consciousness: participation attitude, sport mood and motivation to participate in sports, male scores were generally higher than women, and sports emotion and participation motivation score reached a significant level, that is, $P < 0.05$. The t-test shows that there are significant differences between men and women in the dimension of sports emotion. The results show that boys are more active than girls in the dimension of sports emotion. The significant difference in this dimension is due to the different physiological and psychological characteristics of male and female students. At the same time, there are also significant differences in the enthusiasm of male and female students for sports. In addition, most boys want to be competitive and full of personality, and want to participate in challenging and exciting sports.

2. Statistics of College Students' sports awareness and college students' sports awareness of different genders after the normalization of the epidemic

It can be seen from table 4 that during the normalization of covid-19 epidemic, the three dimensions selected in the research on College Students' Sports Consciousness: attitude, emotion and motivation to participate in sports exceeded the theoretical average value of 3. Among them, the attitude and motivation of participating in sports have improved before the outbreak of the epidemic. The reason is covid-19, when J city took active measures to seal the city, and students temporarily lost the opportunity and space for outdoor activities. In this state, the word "health" became the hot word after "covid-19". People began to pay attention to their health and family health, and exercise became an important part of daily life. During the period of isolation and city closure, home exercise has gradually become the center of their daily exercise activities, and various forms of exercise continue to appear. This also makes them have a greater improvement in the dimensions of sports attitude and sports motivation than before.

Table 2. Statistics of College Students' overall sports awareness.

	Mean	Theoretical average value	Standard deviation
Sports participation attitude	3.35	3	1.107
Sports emotional emotions	3.48	3	0.466
Sports participation motivation	3.41	3	0.934

Table 3. Statistics of sports consciousness of college students of different genders.

Variable	Male (X+SD)	Female (X+SD)	T	P
Sports participation attitude	3.47±0.765	3.33±0.234	0.55954	0.36966
Sports emotional emotions	3.68±0.437	3.48±0.518	0.85143	0.04141
Sports participation motivation	3.75±0.269	3.34±0.682	0.97566	0.01717

Table 4. Statistics of College Students' overall sports awareness.

Variable	Mean	Theoretical average value	Standard deviation
Sports participation attitude	3.52	3	1.04434
Sports emotional emotions	3.63	3	0.39087
Sports participation motivation	3.60	3	0.83426

According to table 5, among the three dimensions of Sports Awareness Research for students of different genders during the normalization of covid-19 epidemic, the dimensions of sports emotion and motivation to participate in sports reached a significant level through independent t-test, that is, P value < 0.05 . During the normalization of the epidemic, the sports emotion dimension was 3.66 for boys and 3.52 for girls, with significant differences. This is because boys can maintain a higher level of self-discipline than girls when exercising at home, because most of them will exercise regularly and have formed their own exercise methods and time. For them, home exercise just changes the place of exercise. For female students, they usually prefer to go to the fitness club in the city. During the period of home isolation after the outbreak of the epidemic, they may lack systematic procedures and exercise guidance, so they are not as good as male students in emotional exercise. In terms of sports motivation, the average scores of male and female students have increased compared with that before the outbreak of the epidemic, indicating that the general willingness of students to exercise at home isolation has improved, and the level of health awareness has gradually improved. Among them, boys are more concerned about their health and life improvement when they are isolated at home, while girls are more concerned about their body shape.

Knowledge and application of College Students' health knowledge before and after COVID-19

Through the investigation of 419 students and analysis of SPSS data, it is concluded that, as shown in table 6, before the outbreak of COVID-19, the average number of "basic knowledge of health knowledge" of K9 students was $=3.0010$. After the outbreak of COVID-19, the average proficiency of "basic knowledge of health" of college students was $K9=4.4810$. $P < 0.05$, there are significant differences between the two groups of data. There is a significant difference between the students' basic knowledge of health knowledge before and after the outbreak of COVID-19, and the basic knowledge and skills of college students have been further developed. Before the outbreak of COVID-19, students' sports and related knowledge experience averaged $K10=2.8621$.

DISCUSSION

The epidemic has increased students' interest and fun in sports and played a positive role in the development of students' sports awareness.⁴ To sum up and its analysis, it can be seen that before the outbreak of the epidemic, students' interest and pleasure in sports were at a normal level. Influenced by COVID-19, schools, families and society are actively guiding students to do physical exercises, and the forms of sports have changed. Before the outbreak of the epidemic, students mainly took physical exercise in schools. After the epidemic, it gradually changed to the form of home

Table 5. Statistics of sports behavior of college students of different genders.

Variable	Male (X+SD)	Female (X+SD)	T	P
Sports participation attitude	3.54±0.852	3.42 ±0.482	0.76154	0.72013
Sports emotional emotions	3.66±0.741	3.52 ±1.043	1.14029	0.02626
Sports participation motivation	3.78±1.189	3.58 ±0.790	1.19483	0.03737

Table 6. Comparison of College Students' health knowledge before and after COVID-19.

Variables	Number	Mean before the outbreak (points)	Mean value after outbreak (points)	T	P	Lifting range (min)
K9	419	3.0010±0.7190	4.4810±0.5036	-12.6849	0.000	1.4800±0.8472
K10	419	2.8621±0.8474	4.2321±0.6670	-12.2819	0.000	1.3700±0.8036
K11	419	2.1200±0.3920	3.2600±0.4832	-19.2496	0.000	1.1400±0.4259
K12	419	2.7700±0.6451	4.5700±0.6375	-27.5388	0.000	1.8000±0.4723

physical exercise. College students can carry out family exercises such as chess games, rope skipping, shuttlecock and so on at home. Such forms of entertainment and sports can change the family atmosphere and develop the brain of college students, so as to transfer psychological anxiety factors. Through sharing social information and experiences, college students gradually realize that New Coronavirus is more likely to attack weak people and unhealthy people in the lung. Once they realize the importance of sports, they will exercise from the heart and have a deeper understanding of sports, so as to cultivate their interests and hobbies independently.

COVID-19 has promoted the improvement of students' sports consciousness and has positive effects on the development of students' health habits. Sports awareness aims to make people aware of the importance of participating in sports and encourage people to take physical exercise. It will be affected by different things at different ages. The epidemic makes students realize the importance of sports to meet their own needs, so they are interested in sports, which leads to the improvement of family attitude towards sports, so as to develop students' awareness in the field of physical exercise. From the objective conditions, the epidemic has changed the physical exercise environment of students. The change from relatively free sports environment to restricted sports environment directly affects the atmosphere of students' sports.

COVID-19 plays a positive role in promoting students' knowledge of basic health. The basic health knowledge of college students includes four levels: physical health knowledge, mental health knowledge, moral health knowledge and social adaptation health knowledge. After the outbreak of COVID-19, the state, society and schools publicized health awareness and epidemic prevention knowledge to citizens through television, Internet and other channels through online expert lectures, expert interviews and health meetings. New Coronavirus has aroused widespread concern, people pay more attention to health awareness, and pay more attention to students' mental health. Parents, schools and society through multiple platforms and ways in order to shape students' psychological formation law and mental health knowledge.⁵ In a short

period of time, students have been influenced, coupled with the reasonable explanation of parents and teachers, the basic knowledge of College Students' health has been significantly improved.

COVID-19 plays a positive role in promoting students' physical exercise and related cognitive experience. Sports and related knowledge is a kind of psychological activity based on sports and health related knowledge. The key is whether people are exercising with clear health goals, not by the amount of exercise.⁶ After the outbreak, college students realized the importance of COVID-19's injuries and exercise to their bodies, so that they could take aerobic exercise to improve their physiological functions during isolation. For example, do more aerobic exercise to improve the activity of lung cells. The selection of sports plan and the anticipation of proper exercise are greatly improved, and the level of health consciousness and exercise knowledge is improved, so that students' exercise degree of COVID-19 is further improved, and their sense of experience is further improved.⁷

CONCLUSION

Since December 2019, the outbreak of pneumonia in New Coronavirus in China has posed a serious threat to public safety and has caused huge losses to the national economic development. So far, covid-19 epidemic prevention and control has entered the normalization stage. This paper analyzes the health awareness and behavior of college students before and after the online politics class. Research shows that compared with before the epidemic, college students' health awareness and sports behavior have been significantly improved.

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