

# ANALYSIS OF SPORTS BEHAVIOR AND THE CURRENT SITUATION OF YOUNG STUDENTS UNDER THE BACKGROUND OF COVID-19



ORIGINAL ARTICLE  
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ANÁLISE DO COMPORTAMENTO ESPORTIVO E DA SITUAÇÃO ATUAL DOS JOVENS ESTUDANTES SOB O CONTEXTO DA COVID-19

ANÁLISIS DEL COMPORTAMIENTO DEPORTIVO Y DE LA SITUACIÓN ACTUAL DE LOS JÓVENES ESTUDIANTES EN EL CONTEXTO DEL COVID-19

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## ABSTRACT

**Introduction:** With the repeated covid-19 epidemic, people have gradually realized the importance of physical exercise, so the sports enthusiasm of young students has also been improved to a certain extent. **Objective:** Analyze the sports behavior and status in adolescent students under the background of covid-19. **Methods:** A questionnaire survey was used in this paper. The questionnaire design is carried out from three aspects: current exercise status, changes of physical exercise, and sports behavior motivation of young students. **Results:** Students and parents prefer exercises at home or in the open space of a relatively safe and single community, choosing non-contact sports that can be completed by a single person or are far away from each other. Improvement in both frequency and duration of exercise was observed in the young students, and most had a gain in psychological quality. **Conclusion:** Physical education teachers must fully match the actual situation of the epidemic's current development by choosing effective teaching methods to promote the continuous development of young students' physical quality. **Level of evidence II; Therapeutic studies - investigation of treatment results.**

**Keywords:** Covid-19; Teenagers; Sports.

## RESUMO

**Introdução:** Com a repetida epidemia da covid-19, as pessoas foram gradualmente percebendo a importância do exercício físico e um crescimento no engajamento esportivo entre os jovens estudantes foi observado. **Objetivo:** Analisar o comportamento e o status esportivo dos estudantes adolescentes sob o contexto da covid-19. **Métodos:** Este trabalho utilizou uma pesquisa por questionário com desenho realizado a partir de três aspectos: estado atual do exercício físico, alterações do exercício físico, e motivação do comportamento esportivo nos jovens estudantes. **Resultados:** Os estudantes e seus pais preferem exercícios em casa ou em espaço aberto relativamente seguro e isolado, escolhendo esportes sem contato que podem ser realizados por uma única pessoa ou em que estejam longe um do outro. Observou-se uma melhora tanto na frequência quanto na duração dos exercícios físicos dos jovens estudantes e a maioria teve um ganho na qualidade psicológica. **Conclusão:** Os professores de educação física devem combinar plenamente a situação real do atual desenvolvimento da epidemia escolhendo métodos de ensino eficazes que promovam o desenvolvimento contínuo da qualidade física dos jovens estudantes. **Nível de evidência II; Estudos terapêuticos - investigação dos resultados do tratamento.**

**Descritores:** Covid-19; Adolescentes; Esportes.

## RESUMEN

**Introducción:** Con la repetida epidemia del covid-19, la gente se fue dando cuenta de la importancia del ejercicio físico y se observó un aumento del interés por el deporte entre los jóvenes estudiantes. **Objetivo:** Analizar el comportamiento y la situación deportiva de los estudiantes adolescentes en el contexto del covid-19. **Métodos:** Este trabajo utilizó una encuesta con diseño de cuestionario realizada desde tres aspectos: estado actual del ejercicio, cambios de ejercicio y motivación del comportamiento deportivo en jóvenes estudiantes. **Resultados:** Los estudiantes y sus padres prefieren hacer ejercicio en casa o en un espacio abierto relativamente seguro y aislado, eligiendo deportes sin contacto que puedan ser realizados por una sola persona o donde estén alejados unos de otros. Se observó una mejora tanto en la frecuencia como en la duración del ejercicio en los jóvenes estudiantes y la mayoría tuvo una ganancia en la calidad psicológica. **Conclusión:** Los profesores de educación física deben ajustarse plenamente a la situación real del desarrollo actual de la epidemia eligiendo métodos de enseñanza eficaces que promuevan el desarrollo continuo de la calidad física de los jóvenes estudiantes. **Nivel de evidencia II; Estudios terapéuticos - investigación de los resultados del tratamiento.**

**Descriptorios:** Covid-19; Adolescentes; Deportes.



## INTRODUCTION

New Coronavirus (SARS-CoV-2) is a newly discovered product.  $\beta$  Coronavirus is prone to lung infection and acute infectious pneumonia, namely New Coronavirus pneumonia (COVID-19). According to official data, as of March 1, 2020, covid-19 infected 80026 patients in China, causing 2912 deaths.<sup>1</sup> Covid-19 epidemic in China is urgent and the situation is grim. National, provincial, municipal and district level responses have been issued. All primary and secondary schools and colleges and universities have postponed the opening time, and all industries are closed to prevent the spread of the epidemic. In the current severe situation, there is no clear and effective antiviral drugs, so good health awareness and physical fitness play an important role in the prevention and treatment of covid-19.<sup>2</sup>

In order to ensure that students are not affected by the epidemic, the state has put forward the slogan of "class suspension without school suspension". Colleges and universities, primary and secondary schools need to actively carry out online counseling and take prevention and control measures at the same time. Literature shows that the atmosphere and development of home sports in China is still in its infancy.<sup>3</sup> The literature shows that during the covid-19 pneumonia epidemic, the research on home exercise for the public began to enter the vision of researchers.<sup>4</sup> According to the literature, exercise during New Coronavirus outbreak is beneficial to safety. Regular exercise can play an anti-inflammatory role, and even one exercise can help improve the body's immune function. The literature selected 1893 people to investigate when the epidemic occurred. The results showed that 53.15% of them exercise at home independently. Therefore, it is proposed to promote individual scientific and reasonable physical activities, including selecting exercise location, frequency and intensity.<sup>5</sup> This paper has a certain understanding of the current situation and needs of young students' sports behavior, puts forward the problems existing in young students' sports behavior under the relevant background, and puts forward corresponding teaching suggestions from two aspects of online teaching and offline teaching.<sup>6</sup>

## METHODS

Firstly, this paper uses the literature research method to sort out, and integrate and analyze the covid-19 epidemic situation, teenagers' physical education teaching and learning, and the combination of online and offline physical education teaching. In the process of questionnaire design, this paper consulted a large number of documents and communicated with some students and parents from three aspects: the first is the current exercise status of young students, including their exercise venues, exercise organization forms and common sports types; The second is the current changes of young students' physical exercise, which is compared before and after covid-19 from four aspects: exercise frequency, exercise duration, exercise intensity and exercise attitude, so as to have a certain understanding of the current sports behavior and psychology; Finally, it analyzes the sports behavior motivation of young students, including their physical exercise psychology and the physical exercise motivation of students of different genders.

Through the combination of online and offline, this questionnaire distributed and collected about 1000 students from several high schools in the city. The study and all the participants were reviewed and approved by Ethics Committee of North University of China (NO. 2019NUASSD). Due to the interference of certain factors, 687 questionnaires were collected in this study. After excluding 52 invalid questionnaires, 635 valid questionnaires were obtained, including 312 male high school students and 323 female high school students. This paper uses Excel software to integrate and analyze the collected data, and uses SPSS software to process and compare the motivation of students of different genders, and carries out independent variance t-test. If  $P > 0.05$ , there is no significant difference, and if  $P < 0.05$ , there is significant difference.

## RESULTS

### Analysis on the current situation of physical exercise of young students under the background of Covid-19

In order to have a deeper understanding of the current situation of physical exercise of young students, this paper investigates the current situation of physical exercise from three aspects: exercise venues, organizational forms and activity types. The specific results are as follows:

As shown in Table 1, the venues for physical exercise of young students under the background of covid-19, of which the indoor physical exercise venue with the highest proportion is 267, accounting for 42.05%; The second is balcony or own courtyard, with 114 people, accounting for 17.95%; The third is the open space of the community, with 88 people, accounting for 13.86%. It can be seen from the survey results in (Table 1) that with the continuous repetition of covid-19 epidemic, students and parents are more inclined to exercise at home or in the open space of the community with relatively safe and single personnel.

As shown in Table 2, the organizational form of physical exercise of young students under the background of covid-19, of which the organizational form with the highest proportion is to keep company with their families, with 348 people, accounting for 54.80%; The second is to exercise alone, with 126 people, accounting for 19.84%; The third is to keep company with classmates, with 97 people, accounting for 15.28%. It can be seen from the research in Table 2 that, in line with the choice of exercise venues, more than half of teenagers choose to exercise with their families in the process of home exercise, which not only improves the enthusiasm of exercise, but also promotes the feelings between their families, and separate training is also considered for epidemic prevention and control.

As shown in Table 3, the sports types of physical exercise of young students under the background of covid-19 are shown. Among them, the sports type with the highest proportion is rope skipping, with 125 people, accounting for 19.69%; The second is table tennis, badminton and other ball games, with 124 people, accounting for 19.53%; The third is running,

**Table 1.** Venues for physical exercise of young students under covid-19 background.

Place	Number	Percentage
Indoor	267	42.05%
Balcony or home courtyard	114	17.95%
Community	88	13.86%
Square, park	62	9.76%
Gym	21	3.31%
Way	45	7.09%
Outdrawn area such as suburban wild	13	2.05%
Fitness center	12	1.89%
Other	13	2.05%
Total	635	100%

**Table 2.** Organizational forms of physical exercise of young students under the background of covid-19.

Organize form	Number	Percentage
Separate exercise	126	19.84%
Companionship with my family	348	54.80%
Companion	97	15.28%
Social group nature	24	3.78%
Other	40	6.30%
Total	635	100%

with 115 people, accounting for 18.11%. From the perspective of the top three sports, they are all non-contact sports that can be completed by one person or are far away from each other. Therefore, they have more advantages in the current situation of normalization of epidemic prevention and control. The number one rope skipping can be completed indoors or on the balcony due to its small space requirements, so it accounts for a relatively high proportion compared with other sports.

### Changes of physical exercise of young students before and after covid-19

In the previous section, this paper analyzes the current situation of teenagers' physical exercise. In order to explore the impact of covid-19 epidemic on Teenagers' physical exercise behavior, it is necessary to compare teenagers' physical exercise before and after covid-19 epidemic, so as to have a more comprehensive understanding. The specific research results are as follows:

As shown in Table 4, the changes of physical exercise frequency of young students before and after covid-19 are shown. Among them, the number of students 0 times a week has decreased from 154 to 76, and the proportion has decreased by 12.28%; The number of people once or twice a week increased by 9.29% from 242 to 301; The number of people 3-5 times a week increased by 3.78% from 178 to 202; The number of people six times a week or more decreased by 0.79% from 61 to 56. From the overall research results in Table 5, the proportion of people who exercise 1-2 times and 3-5 times a week has increased, while the proportion of people who exercise 0 times, 6 times or more a week has decreased to some extent. Combined with the epidemic situation, it can be seen that with the repetition of covid-19 epidemic, teenagers gradually realize the importance of physical exercise, so they consciously carry out certain physical exercise every week. Therefore, the frequency of 0 times is greatly reduced, and the frequency of 1-2 times and 3-5 times per week is gradually increased. However, because long-term exercise may expose adolescents to the risk of covid-19 infection, adolescents and parents have consciously reduced the frequency of outdoor physical exercise, so the proportion of six or more times has decreased slightly.

(Table 5) shows the changes of physical exercise duration of young students before and after covid-19. Among them, the number of people within 15 minutes of each exercise decreased by 5.20% from 67 to 34; The number of people exercising for 15-30 minutes each time increased by 5.98% from 215 to 253; The number of people exercising for 30-60

**Table 3.** Sports types of physical exercise of young students under the background of covid-19.

Motion type	Number	Percentage
Basketball, etc.	98	15.43%
Ping feathers and other ball sports	124	19.53%
Fitness exercise	86	13.54%
Yoga	87	13.70%
Jumping rope	125	19.69%
Running	115	18.11%
Total	635	100%

**Table 4.** Changes in physical exercise frequency of young students before and after covid-19 (times / week).

Option	Before COVID-19		After COVID-19		Change rate
	Number	Percentage	Number	Percentage	
0	154	24.25%	76	11.97%	-12.28%
1-2	242	38.11%	301	47.40%	9.29%
3-5	178	28.03%	202	31.81%	3.78%
6 and above	61	9.61%	56	8.82%	-0.79%

minutes each time increased by 0.31% from 176 to 178; The number of people exercising for more than 60 minutes each time decreased by 1.10% from 177 to 170. Overall, the proportion of exercise time within 15 minutes and more than 60 minutes decreased slightly, the proportion of 15-30 minutes and 30-60 minutes increased slightly, and the proportion of 15-30 minutes increased the most. Combined with the current situation of covid-19 epidemic, it can be seen that sports training has been proved to be helpful to improve resistance, and the short-term sports effect is not ideal. Therefore, the duration of physical exercise for teenagers has been improved to a certain extent, with a greater proportion of 15-30 minutes. Because many teenagers choose indoor sports, there are certain restrictions on the duration from the perspective of neighborhood relations. Therefore, the duration of exercise for more than 60 minutes is slightly reduced, but it still accounts for a high proportion.

### Analysis of teenagers' sports motivation under the background of covid-19

(Table 6) shows the psychological analysis of physical exercise of young students under the covid-19 background. Among them, the top three are positive emotions, which are peaceful (74.80%), self-confidence (66.30%) and pleasure (53.70%), and the last three are negative emotions, which are worry (46.93%), anxiety (24.57%) Pain (15.28%). It can be seen from the research in Table 6 that under the complex background of covid-19 epidemic, there is a relatively complex state in the psychology of physical exercise of young students. Therefore, when teaching students physical education, teachers should give appropriate guidance to their psychology.

**Table 5.** Changes of physical exercise duration of young students before and after covid-19 (min / time).

Option	Before COVID-19		After COVID-19		Change rate
	Number	Percentage	Number	Percentage	
<15 min	67	10.55%	34	5.35%	-5.20%
15-30 min	215	33.86%	253	39.84%	5.98%
30-60 min	176	27.72%	178	28.03%	0.31%
>60 min	177	27.87%	170	26.77%	-1.10%

**Table 6.** Psychological analysis of physical exercise of young students under the background of covid-19 (multiple choices).

Physical exercise	Number	Percentage
Peaceful	475	74.80%
Pleasure	341	53.70%
Confidence	421	66.30%
Worry	298	46.93%
Anxiety	156	24.57%
Anger	121	19.06%

## DISCUSSION

During online teaching, physical education teachers should make use of discipline advantages to make students have a deeper understanding of the epidemic. At the same time, it is necessary to convey to the students the importance of strengthening exercise and improving their physical resistance, and urge them to strictly abide by the needs of home isolation and do a good job of sanitation and disinfection. Physical education teachers not only need to make sports play the advantages of strong operability, but also need to guide students to prepare sports and practice with reference to online demonstration videos. Schools can choose to carry out different types of sports activities, such as basketball, football, badminton, table tennis, aerobics and rope skipping, so as to improve students' physical health during the epidemic, so that they can devote themselves to study and life in a good mental state. Moreover,

teachers also need to improve students' safety awareness and cultivate students' habit of independent exercise, so as to lay a solid foundation for epidemic prevention and control.

Before class, the teacher should arrive in advance and prevent students from gathering in groups, and then guide students to the designated area to carry out warm-up exercises. Students should wait for the class. Before class, teachers should make full use of questionnaires and other forms to understand students' physical fitness level. Within two weeks of school, teachers should reasonably design training programs, control the amount and intensity of exercise, and gradually increase the exercise load. During the exercise, we will continue to follow up and pay attention to the physical condition of students, and focus on taking care of special student groups. During and after exercise, sample and measure the immediate pulse value and recovery of students to reasonably adjust the load. Finally, pay attention to hand hygiene and guide students to disinfect in batches. Under the background of anti-epidemic, students should reasonably arrange whether to wear masks during exercise, based on the intensity and rationality of exercise, so as to avoid hypoxia. If the exercise time is long and the oxygen demand is high, take off the mask in time, wear it after breathing smoothly, and carry out the above behaviors alternately.

## CONCLUSION

It can be found from this study that with the continuous repetition of covid-19 epidemic and the normalization of epidemic prevention and control, physical exercise, as an effective means of strengthening the body, can improve its own resistance and reduce the impact of covid-19 virus on the human body as much as possible. As the key protection object, the effective physical education teaching guidance for teenagers can greatly improve their physical health and reduce the impact of the epidemic on their study and life as much as possible. Through the investigation of this paper, it can be found that teenagers have a certain enthusiasm and subjective initiative for physical exercise. With the development of the epidemic, the frequency and duration of exercise have been improved to a certain extent, and the exercise is more scientific. Therefore, physical education teachers should fully combine the actual situation of the current epidemic development and choose effective teaching methods to provide better physical education teaching guidance for teenagers, so as to promote the continuous development of young students' physical quality.

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

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