

PHYSICAL ACTIVITY SAFETY IN UNIVERSITY RESIDENTS DURING COVID-19



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SEGURANÇA DE ATIVIDADE FÍSICA EM RESIDENTES UNIVERSITÁRIOS DURANTE A COVID-19

SEGURIDAD DE LA ACTIVIDAD FÍSICA EN RESIDENTES UNIVERSITARIOS DURANTE EL COVID-19

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ABSTRACT

Introduction: COVID-19 has affected physical activities. In the face of the epidemic, challenges arise, such as performing physical activities efficiently and safely, maintaining people's interest in sports, improving the safety of residents' sports activities, and increasing the number of active sportspeople. **Objective:** Investigate the safety of physical activities among university residents in COVID-19. **Methods:** This paper designed a set of questionnaires from three aspects: the distribution of residents' sports infrastructure, residents' sports skills, and the safety of residents' sports activities. A total of 3152 samples were obtained, and Excel software was used for data entry, processing, and analysis. **Results:** With the standardized development of the prevention and control of COVID-19, the residents' sports infrastructure was gradually improved. There has been progressed in the distribution of sports facilities, the composition of the underlying surface, the provision of services related to sports activities, and health awareness. According to the survey, the proportion of major injuries among residents was 0.190%; the proportion of moderate multiple injuries was 0.476% after preventive training. The proportion of moderate minor injuries was 3.109%. The proportion of multiple minor injuries was 26.491%; the proportion of minor injuries was 38.642%. At this time, the safety of physical activities in the study area was considered acceptable. **Conclusion:** Related departments should cooperate with the community to increase college residents' awareness of sports safety and the importance of training skills by optimizing infrastructure, improving volunteer services, and enhancing publicity to reduce the hidden dangers of sports safety as much as possible. **Level of evidence II; Therapeutic studies - investigation of treatment outcomes.**

Keywords: COVID-19; Physical Fitness; Sports.

RESUMO

Introdução: A COVID-19 tem afetado as atividades físicas e diante da epidemia surgem desafios como realizar atividades físicas de forma eficiente e segura, manter o interesse das pessoas pelo esporte, melhorar a segurança das atividades esportivas dos residentes e aumentar o número de esportistas ativos. **Objetivo:** Investigar a segurança das atividades físicas entre os residentes universitários no contexto da COVID-19. **Métodos:** Este documento elaborou um conjunto de questionários a partir de três aspectos: a distribuição da infraestrutura esportiva dos residentes, as habilidades esportivas dos residentes e a segurança das atividades esportivas dos residentes. Um total de 3152 amostras foram obtidas, e o software Excel foi usado para entrada, processamento e análise de dados. **Resultados:** Com o desenvolvimento normalizado da prevenção e controle da COVID-19, a infraestrutura esportiva dos residentes foi gradualmente aprimorada. Houve um progresso na distribuição das instalações esportivas, composição da superfície subjacente, prestação de serviços relacionados às atividades esportivas, além da conscientização da saúde. Segundo a pesquisa, a proporção de lesões graves entre os residentes foi de 0,190%; a proporção de lesões múltiplas moderadas foi de 0,476% após o treinamento preventivo. A proporção de lesões menores moderadas foi de 3,109%. A proporção de lesões menores múltiplas foi de 26,491%; a proporção de ferimentos menores foi de 38,642%. Nesta época, a segurança das atividades físicas na área de estudo foi considerada aceitável. **Conclusão:** Os departamentos relacionados devem cooperar com a comunidade para aumentar a conscientização dos residentes universitários sobre a segurança esportiva e a importância das habilidades de treinamento, otimizando a infraestrutura, melhorando os serviços voluntários e reforçando a publicidade, no intuito de reduzir ao máximo os perigos ocultos da segurança esportiva. **Nível de evidência II; Estudos terapêuticos - investigação dos resultados do tratamento.**

Descritores: COVID-19; Aptidão Física; Esportes.

RESUMEN

Introducción: El COVID-19 ha afectado a las actividades físicas y ante la epidemia surgen retos como realizar actividades físicas de forma eficaz y segura, mantener el interés de la población por el deporte, mejorar la seguridad de las actividades deportivas de los residentes y aumentar el número de deportistas activos. **Objetivo:** Investigar la seguridad de las actividades físicas entre los residentes universitarios en el contexto del COVID-19. **Métodos:** Este trabajo diseñó un conjunto de cuestionarios desde tres aspectos: la distribución de la infraestructura deportiva de los residentes, las habilidades deportivas de los residentes y la seguridad de las actividades deportivas de los residentes. Se obtuvo un total de 3152 muestras y se utilizó el programa Excel para la introducción, el tratamiento y el análisis de los



datos. Resultados: Con el desarrollo normalizado de la prevención y el control del COVID-19, mejoraron gradualmente las infraestructuras deportivas de los residentes. Hubo avances en la distribución de las instalaciones deportivas, la composición de la superficie subyacente, la prestación de servicios relacionados con las actividades deportivas y la concienciación sanitaria. Según la encuesta, la proporción de lesiones graves entre los residentes fue del 0,190%; la proporción de lesiones múltiples moderadas fue del 0,476% tras la formación preventiva. La proporción de lesiones leves moderadas fue del 3,109%. La proporción de lesiones leves múltiples fue del 26,491%; la proporción de lesiones leves fue del 38,642%. En este momento, la seguridad de las actividades físicas en la zona de estudio se considera aceptable. Conclusión: Los departamentos relacionados deben cooperar con la comunidad para aumentar la concienciación de los residentes universitarios sobre la seguridad en el deporte y la importancia de la formación de habilidades mediante la optimización de las infraestructuras, la mejora de los servicios de voluntariado y el aumento de la publicidad, con el fin de reducir al máximo los peligros ocultos de la seguridad en el deporte. **Nivel de evidencia II; Estudios terapéuticos - investigación de los resultados del tratamiento.**

Descriptor: COVID-19; Aptitud Física; Deportes.

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INTRODUCTION

Covid-19 epidemic broke out, and the virus was highly contagious and spread rapidly. Due to the large population flow during the Spring Festival, there was a wide range of transmission, and there was no effective vaccine at that time. In order to curb the spread of the virus, the Chinese government launched a series of prevention and control strategies, such as home isolation, medical observation, no travel, and blockade of cities in some serious areas, which had an inevitable impact on the lifestyle and daily activities of Chinese residents.¹ People spend more time at home, spend too much time playing mobile phones, drinking and sleeping, and develop an unhealthy lifestyle. Due to the reduction of exercise time, individual individuals even do not exercise, resulting in the decline of people's physical function.² The long-term depressed living environment has also caused psychological impact, and the continuous vicious circle of physical and psychological problems.³ The epidemic also affects major sports events and sports activities. The suspension of sports events and the closure of stadiums and gymnasiums have led to sports lovers' reduced interest in sports and even lost their sports habits, which has also caused considerable economic losses to many sports industries.⁴ At the sports level, in the face of the epidemic, how to carry out sports activities efficiently and safely, maintain people's interest in sports and increase the number of sports is a problem at this stage.⁵ To solve this problem, this paper investigates and studies the safety of residents' sports activities, has more understanding of residents' sports situation under the background of covid-19, and puts forward corresponding safety guarantee strategies.

METHOD

This paper combines the literature research method with the interview method. Firstly, through the query, reading and sorting of relevant literature, this paper obtains the data of sports policy and sports environment change under the background of covid-19. The study and all the participants were reviewed and approved by Ethics Committee of Haikou University of Economics(NO.HKUE-2019D074). Then exchange interviews with sports staff and sports lovers of relevant departments to obtain the sports situation of residents in the study area. On this basis, combining the two materials, this paper designs a set of questionnaire from three aspects: the distribution of residents' sports infrastructure, residents' sports skills and the safety of residents' sports activities. The questionnaire is mainly single choice, which is convenient for targeted data statistics.

This paper uses the combination of online and offline to collect data in the research area for a week through the strategy of outdoor distribution and online distribution. The total number of samples obtained in this questionnaire survey is 3152, and the number of samples is sufficient,

which can obtain more universal and scientific data results. For the obtained results, Excel software is used to input, process and analyze the data, and the pictures are drawn, which makes the research results more significant and convenient for subsequent analysis.

RESULTS

Distribution of residents' sports infrastructure under the background of covid-19

For residents, the safety of sports activities is related to two aspects: one is the site environmental factors, the other is the personal factors of residents. Therefore, this section discusses the distribution of residents' sports infrastructure under the background of covid-19, including its distribution location and underlying surface type.

As shown in Figure 1, in the survey of residents' physical exercise infrastructure distribution, A is the indoor area, where 259 people exercise, and the overall proportion is 8.217%; B is the community square, where 751 people exercise, and the overall proportion is 23.826%; C is the stadium, where 404 people exercise, with an overall proportion of 12.817%; D is a leisure park, where 723 people exercise, with an overall proportion of 22.938%; E is the fitness trail, where 796 people exercise, and the overall proportion is 25.254%; F refers to other areas, including private courtyard, sidewalk, etc. 219 people exercise here, with an overall proportion of 6.948%.

According to the research results, under the background of covid-19, more residents choose to exercise in areas with wider space and smaller population density. Therefore, indoor areas including indoor natatoriums and gyms and some relatively closed stadiums and gymnasiums are not the popular choice of residents' Sports during covid-19. For residents, due to the transmission risk during the epidemic, residents are more inclined to choose places closer to their living areas during sports, so as to reduce the infection and transmission threat caused by long-distance travel. Therefore, community squares are also widely favored by residents under the background of covid-19.

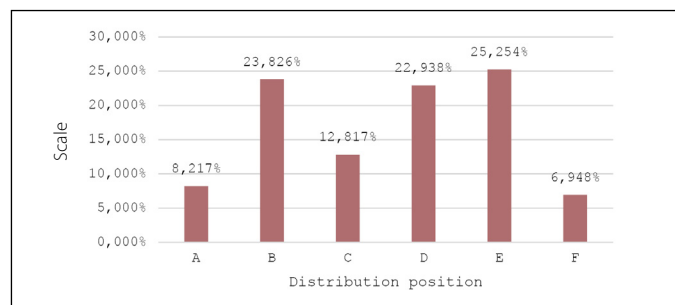


Figure 1. Distribution location of residents' sports infrastructure.

As shown in Figure 2, in the investigation on the type of underlying surface for residents' physical exercise, A is the soil underlying surface. The number of people exercising here is 38, and the overall proportion is 1.206%; B is the underlying surface of permeable brick. The number of people exercising here is 522, and the overall proportion is 16.561%; C is the cement underground cushion surface, where 720 people exercise, and the overall proportion is 22.843%; D is the underlying surface of asphalt road. The number of people exercising here is 521, and the overall proportion is 16.529%; E is the underlying surface of the plastic runway. The number of people exercising here is 832, and the overall proportion is 26.396%; F is the grass underground cushion surface, where 401 people exercise, and the overall proportion is 12.722%; G is the underlying surface of sand and soil. The number of people exercising here is 118, and the overall proportion is 3.744%.

Residents' sports skills in the context of covid-19

For residents, the acquisition and mastery of sports skills are closely related to the safety of sports activities. If residents can't master sports skills correctly, they are easy to get injured due to improper operation.

As shown in Figure 3, in the investigation on the ways to obtain skills for residents' physical exercise, A means to obtain skills through the instructions for use. The number of people is 741, and the overall proportion is 23.515%; B refers to the acquisition of skills through volunteer teaching, with 380 people, and the overall proportion is 12.062%; C is to acquire skills through friend demonstration, with 1048 people, and the overall proportion is 33.264%; D refers to acquiring skills through self exploration, with 619 people, and the overall proportion is 19.643%; E refers to acquiring skills through online video, with 364 people, with an overall proportion of 11.516%.

As shown in Figure 4, in the investigation of residents' mastery of physical exercise skills, A means that they have fully mastered relevant physical skills. The number of people in this part is 1116, and the overall proportion is 35.425%; B refers to the basic mastery of relevant sports skills. The number of this part is 1371, and the overall proportion is 43.525%; C refers to a little knowledge of relevant sports skills. The number of this part is 500, and the overall proportion is 15.863%; D refers to the total ignorance of relevant sports skills. The number of people in this part is 165, and the overall proportion is 5.187%.

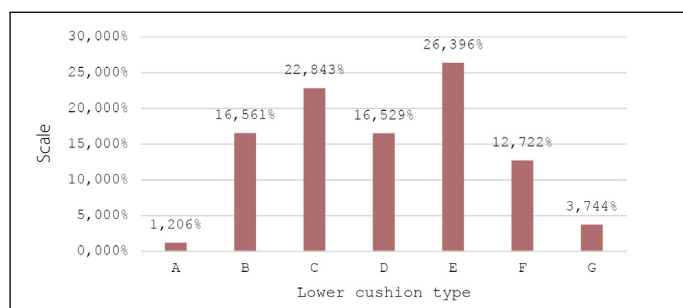


Figure 2. Types of underlying surface of residents' sports infrastructure.

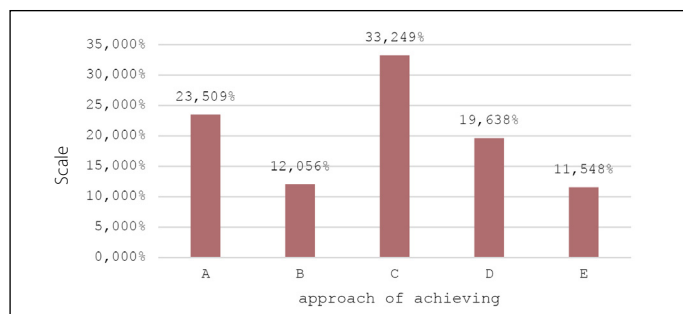


Figure 3. Ways to obtain residents' sports skills.

Safety analysis of residents' sports activities under the background of covid-19

An important indicator of the safety of residents' sports activities is sports injury. As shown in Figure 5, in the investigation of sports injuries in residents' physical exercise, A refers to the occurrence of serious injuries. The number of people in this part is 6, and the overall proportion is 0.190%; B refers to the occurrence of multiple moderate injuries. The number of people in this part is 15, and the overall proportion is 0.476%; C refers to a small number of moderate injuries. The number of people in this part is 98, and the overall proportion is 3.109%; D refers to the occurrence of multiple minor injuries. The number of people in this part is 835, and the overall proportion is 26.491%; E refers to a small number of minor injuries. The number of people in this part is 1218, and the overall proportion is 38.642%; F is never injured. The number of people in this part is 980, and the overall proportion is 31.091%. It can be seen that in the process of mass sports, the vast majority of residents are slightly injured or not injured, and only a few residents have moderate or severe injuries. Therefore, the safety of mass sports in the study area is relatively good.

As the embodiment of residents' subjective initiative, safety awareness has a very important impact on the safety of residents' sports activities. As shown in Figure 6, in the survey of residents' safety awareness in physical exercise, A means that they attach great importance to sports safety. The number of this part is 577, and the overall proportion is 18.306%; B is to pay more attention to sports safety. The number of people in

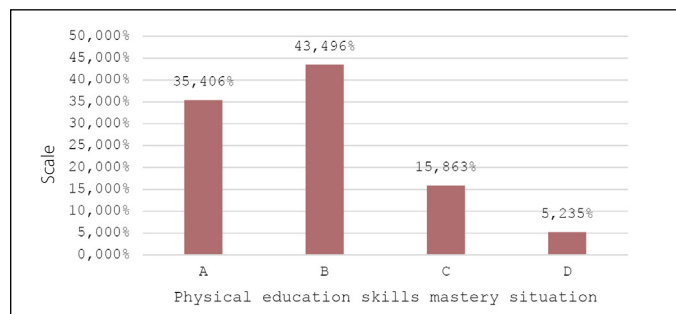


Figure 4. Residents' mastery of sports skills.

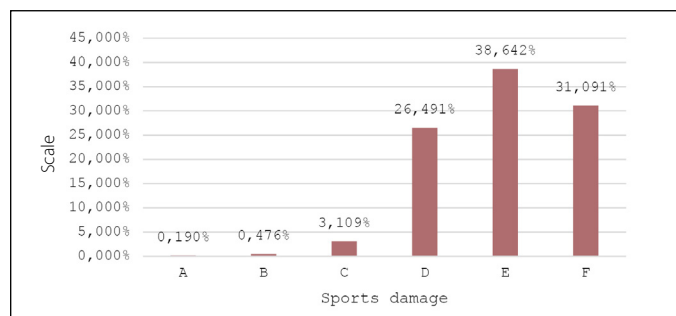


Figure 5. Sports injuries in residents' sports activities.

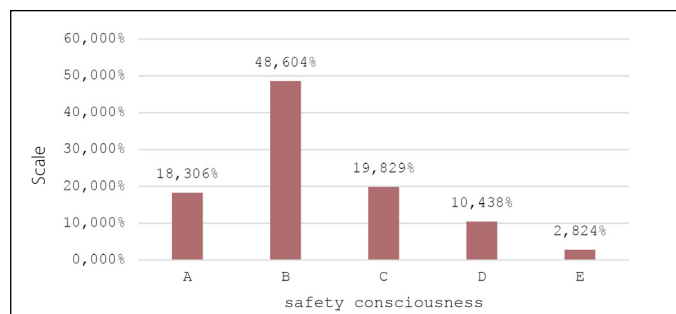


Figure 6. Safety awareness of residents in sports activities.

this part is 1532, and the overall proportion is 48.604%; C refers to the general attention paid to sports safety. The number of people in this part is 625, and the overall proportion is 19.829%; D is not paying much attention to sports safety. The number of people in this part is 329, and the overall proportion is 10.438%; E is the total neglect of sports safety. The number of people in this part is 89, and the overall proportion is 2.824%. It can be seen that at present, most residents have good safety awareness, but a very small number of residents despise safety awareness, which is easy to bring certain sports injuries. Therefore, we must make reasonable suggestions, improve residents' safety awareness and improve the safety of sports activities.

DISCUSSION

During the covid-19 epidemic, for individuals, group activities are very easy to cause the possibility of infection. Novel coronavirus has incubation period and strong infectivity. It may not show disease characteristics in the early stage of the disease. If it is not neglected, it may cause local outbreaks. Many local outbreaks are caused by crowd aggregation. There are many confirmed cases of covid-19 pneumonia caused by people's gathering activities such as sports fields, basketball courts, sports parks, hiking, running groups, gyms and sports organizations, which need to be paid great attention to prevent the spread of the epidemic on a larger scale; From the perspective of life safety, the injury caused by aggregation is life-threatening for people with diseases, especially for the elderly. Their immunity, resistance and other weak health indexes and low cure rate may also lead to the re illness of those who have recovered from the disease; For property safety, for the harm caused by mass gathering, the epidemic prevention mechanism of isolation shall be adopted for the people in close contact. During the isolation period, it will bring great harm to personal time and money, and affect personal normal work and life. The diagnosed personnel have to bear the pain caused by the disease and the harm of personal economy.

The community should strengthen the implementation of epidemic prevention and control measures to ensure the safety of sports activities and events. The scale of exercise should be reduced, and the scale of exercise related personnel should be reduced. At the same time, the exercise related personnel should be encouraged to wear the body temperature inspection mask in real time. For relatively large-scale

sports, the number of sports at the same time should be reduced to achieve the effect that everyone can participate without gathering. The sports ground shall clearly indicate the specific number of people. Report the fever and key personnel to the community and epidemic prevention department immediately. For the confirmed personnel monitored during the campaign, other close contact personnel shall also report, isolate and detect.

CONCLUSION

Covid-19 epidemic has clarified the importance of sports health to a certain extent, so relevant departments and residents have strengthened their attention to physical exercise. It can be seen from the research results of this paper that the current distribution of sports facilities fully takes into account the needs of residents, the distribution is more reasonable, and its underlying surface has also been adjusted according to the principle of safety, but there are still some omissions, which need to be further strengthened. In the mastery of residents' skills, most residents have been able to master relevant skills through the assistance of others or their own learning, but there are still some deficiencies, which need further teaching and improvement by relevant departments. In addition, the current residents' awareness of sports safety is relatively good, and the vast majority of residents are only slightly injured or in a state of no injury. It can be seen that the safety of residents' sports activities in the current study area is relatively high, but there are still some problems. Therefore, relevant departments should work with the community to fully improve residents' sports safety awareness and sports training skills through infrastructure optimization, volunteer service improvement and strengthening publicity, so as to reduce potential sports safety hazards as much as possible and create a safer sports activity space for residents.

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