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A SYSTEMATIC REVIEW: PHYSICAL HEALTH OF ATHLETES DURING COVID PANDEMIC

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ABSTRACT

The COVID-19 pandemic has had a profound impact on athletes, leading to significant physical and mental health challenges. This research focuses on the physical health-related problems encountered by athletes during the pandemic. A systematic review was conducted, analyzing ten selected studies out of a larger pool, which highlighted various health symptoms such as cardiovascular issues, respiratory complications, obesity, and poor sleep. The findings of these studies revealed a significant decrease in athletes' performance as a result of the pandemic, with nine studies specifically indicating the presence of cardiovascular symptoms. In conclusion, the COVID-19 pandemic has posed significant physical health challenges for athletes, as evidenced by the various symptoms identified in the selected studies. The findings reinforce the urgency of implementing interventions and support systems to address these issues. Moreover, future research should investigate the mental health implications to ensure a comprehensive approach to athletes' well-being during and beyond the pandemic. Future studies should explore the mental health challenges faced by athletes during the COVID-19 pandemic to ensure a comprehensive understanding of their holistic health.

INTRODUCTION

The outbreak of COVID-19 began in December 2019 in China, causing clusters of respiratory illnesses. **(Huang C et al., 2019)** This infectious disease is caused by a virus known as SARS-CoV2,genetically related to the SARS outbreak in 2003 **(Adnan Shereen et al 2020)**. Within three months, the World Health Organization declared COVID-19 a pandemic on March 11, 2020. The number of cases has rapidly increased, reaching over 6 million confirmed cases in 216 countries worldwide **(Word health organization, 2020)**. This swift transmission has led to the suspension or postponement of numerous sporting events. For example, the Union of European Football Associations (UEFA) officially postponed the UEFA Champions League Final and other games on March 23, 2020, due to positive tests among professional athletes. The International Olympic Committee (IOC) and the Japanese government similarly announced on March 30, 2020, that the 2020 Tokyo Olympics would be rescheduled to July 2021, while retaining the original name "2020 Tokyo Olympics"**(International Olympic Committee, 2020)**.

Common symptoms of COVID-19 include fever (43.8% on admission and 88.7% during hospitalization) and cough (67.8%). Interestingly, many infected individuals do not show symptoms, making it challenging to monitor the disease during sporting events **(Wong et al., 2020)**. Viral load in both symptomatic and asymptomatic patients is similar, and the pattern of shedding viral genetic material is more akin to the flu than the 2003 SARS virus. This suggests that asymptomatic individuals can spread the virus as effectively as those with symptoms, contributing to the global spread of the disease.

Sporting events, whether with spectators or not, are large public gatherings. To restart such events safely, efforts focus on minimizing the number of people present in one location. This can involve holding closed competitions without spectators and reducing nonessential personnel by canceling press conferences and interviews. Regular cleaning of sporting equipment is crucial, given that the virus can

persist on surfaces like plastic and stainless steel for up to 72 hours. Cleaning with a diluted bleach solution or 70% ethanol is recommended for different surfaces.

Additionally, some individuals experience lingering symptoms after recovering from COVID-19, a phenomenon often referred to as "long-hauler" symptoms. These persistent effects encompass a range of issues, including ongoing fatigue, cardiopulmonary challenges, and breathing difficulties known as dyspnea. The nature of these prolonged symptoms underscores the complex nature of the disease's impact on the body. Effectively managing the fatigue that accompanies these symptoms involves adopting a cautious approach to physical activity. Gradual exercise is recommended, balanced with vigilant monitoring of fever and breathlessness. Furthermore, interventions like cognitive behavioral therapy (CBT) and medication can play a role in alleviating persistent fatigue. **(Lu R et al.,2019)** This multifaceted approach addresses both the physical and psychological dimensions of the condition. Cardiopulmonary symptoms, such as chest pain, warrant thorough evaluation due to potential complications like heart inflammation and post-COVID lung problems. This underscores the importance of medical assessment and appropriate follow-up care for individuals experiencing such symptoms those encountering significant respiratory challenges post-COVID, pulmonary rehabilitation can provide structured support and exercises to enhance lung function and overall respiratory Wellness Tracking oxygen levels becomes pivotal in monitoring the progression of the condition. Oximeters, portable devices that measure blood oxygen saturation, offer a valuable tool in this regard. The severity of dyspnea, or difficulty in breathing, can vary widely among individuals. Mild cases may necessitate routine follow-up visits, while moderate cases might involve more comprehensive testing to determine the underlying causes of the ongoing symptoms. Severe dyspnea demands immediate medical attention to ensure timely intervention and appropriate care. Considering the unique and varied experiences of long-hauler symptoms, a comprehensive assessment is crucial. However, given the persistent and evolving nature of these symptoms, it's also recognized that extensive evaluation might be postponed in certain cases, particularly if dyspnea continues or worsens over a span of three months. **(Giusto et al., (2022).**

METHODOLOGY

Total 10 studies were identified out of 180 studies after that we observed age, number of subjects, symptoms, performance, experience, level of significance. Country and methods. The data was analyzed using the statistics namely frequency, and percentage (%) for furthering the meta-analysis in regards to sample size, level of significance, performance, symptoms etc.

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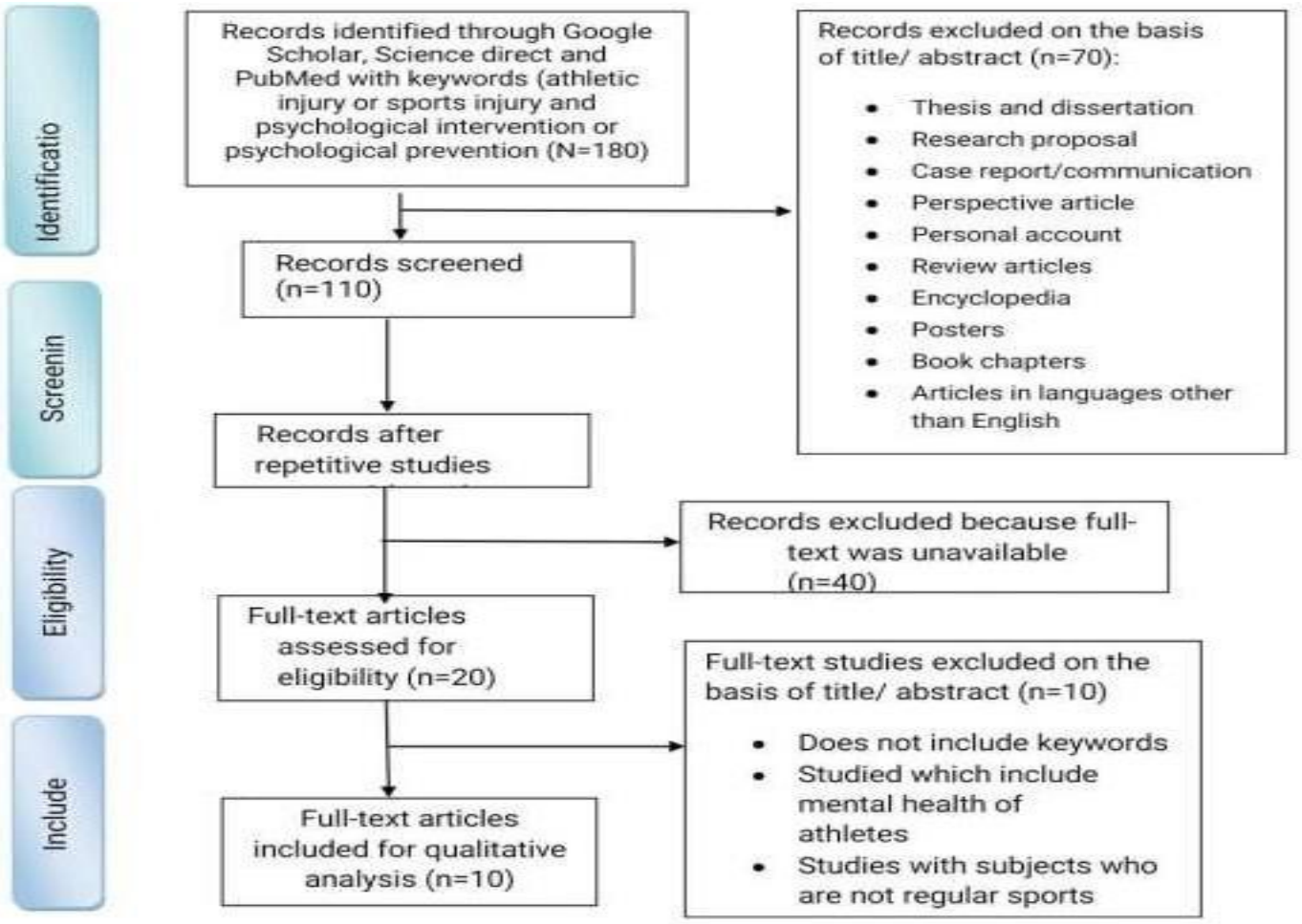

Figure 1: Flow Chart Depicting the Selection of Studies for the Meta-Analysis on physical health of athletes during covid pandemic

RESULT

TOPICS	PAPERS	PERCENTAGE
Highest number of subjects used in papers	4	40%
Highest Symptoms Shown by Subjects in Papers	3	28%
Level of Performance	9	90%
Level of Significance	8	80%
Methods used	7	58%

DISCUSSION OF FINDINGS

The result of the study obtained a significant decrease in the performance ofathletes due to covid pandemic. The finding of the study is in line with In all 10 papers indicates various physical health related symptoms (cardiovascular **(Li et. al.,2021)**, **(Castro et. al.,2020)** respiratory **(Blanco et. al., (2021)** ,deconditioning and poor sleep) which affects the health of athletes due to Covid pandemic. Thus the hypothesis that states that "There would be significant effect of covid pandemic on the physical health of athletes" is accepted.The probable reason were that due to lockdown there were lack of physical activity of athletes **(Chaabene et. al., 2021)**, **(Wunsch et. al., (2022)** moreover the closing gyms, fitness centers andrestrictions, lack of training and professional sports **Vitali et. al., (2022)** activities were stopped and imposed on visiting parks, playground and covid appeared tonegatively affect the physical health of the athletes.

CONCLUSIONS

In conclusion, the findings of the study support the hypothesis that the COVID-19 pandemic has had a significant negative impact on the physical health of athletes. The analysis of the ten selected papers revealed a consistent decrease in athletes' performance, accompanied by various physical health-related symptoms such as cardiovascular issues, respiratory complications, deconditioning, and poor sleep. These findings highlight the detrimental effects of the pandemic on athletes' overall health. The observed decline in performance and the presence of physical health symptoms can be attributed to several factors. The implementation of lockdown measures resulted in a lack of physical activity and limited access to training facilities, leading to a decrease in athletes' fitness levels. The closure of gyms, fitness centers, and restrictions on outdoor activities further contributed to the physical inactivity experienced by athletes. Additionally, the COVID-19 virus itself appears to have a negative impact on athletes' physical health. These conclusions emphasize the importance of implementing strategies to mitigate the adverse effects of the pandemic on athletes' physical well-being. Efforts should be made to provide alternative training options and support systems to maintain athletes' fitness levels during periods of restricted activity. Furthermore, it is crucial to prioritize the safe resumption of training and competition while adhering to appropriate health and safety protocols. The findings of this study underscore the need for comprehensive measures that address both the physical and mental health of athletes during and beyond the COVID-19 pandemic. Continued research in this area is warranted to better understand the long-term effects and develop targeted interventions to support the overall well-being of athletes in similar situations.

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