

Brief communication

Physical education role during coronavirus disease 2019 (COVID-19) pandemic

Physical education and COVID-19

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Abstract -COVID-19 outbreak has been dogged the whole world and besides economic damage; this new virus has been collapsing health units worldwide. Many people have been infected and died every day and so far, there are no vaccines or drugs approved to fight off COVID-19. In this sense, many countries have adopted strategies to avoid virus spread during the quarantine. Social isolation has caused psychological impacts and changes in people's routine, thus physical exercise emerges as an alternative to decrease cognitive problems developed by people during the quarantine. The use of technology to guide people during physical education classes has become a great strategy for people who cannot leave their homes. Besides, technology can insert people in an immersive environment increasing their interaction, merriment, improving their immune and cardiovascular systems. Physical education teacher must be considered an essential health professional during this pandemic period because they can guide and stimulate individuals to practice physical exercise routinely, in order to keep and improve their health.

Keywords: exercise, coronavirus, COVID-19, physical education and training

Introduction

The pneumonia outbreak that emerged in the city of Wuhan, China, in December 2019 has spread quickly around the world and generated thousands of infections and deaths^{1,2}. In order to detect the origin of this pathology, researchers collected samples from the fish market in the city of Wuhan and verified great viral contamination of the animals in this place³. Genetic analysis has shown that the new virus has a genomic sequence of approximately 90% related to severe acute respiratory syndrome derived from bats, and although speculation exists that bats are the original host of the virus, some of the animals from Wuhan fish market may be likely candidates for intermediate transmitters between animals and humans⁴. Posteriorly, it was verified that it belonged to an ancient virus group called Corona from the *coronaviridae* family. The new virus known by Coronavirus (COVID-19) has caused several symptoms in infected humans, mainly cough, fever, fatigue, migraine, and dyspnea⁵⁻⁶.

It is important to note that the COVID-19 incubation period in humans presents an average of 5.1 days, and among individuals infected, the meantime of 11.5 days after the infection has been frequently considered to these people start showing some symptoms⁷. Unfortunately, there are no vaccines or medications approved to fight off this new virus, however, many clinical trials have been ongoing for treating people infected by the COVID-19⁸. In an attempt to decrease the number of infections and deaths, the World Health Organization (WHO) has suggested that social distance and hygienic procedures should be adopted, especially by individuals who have maintained contact with people who tested positive for COVID-19, through laboratory tests⁹.

Beyond social distance, the quarantine period can generate several functional and cognitive impairments to individuals in confinement, such as stress that can directly interfere with sleep¹⁰. It is known that sleep disturbances can influence and cause different metabolic and cardiovascular problems¹¹. Besides, people who are in quarantine must have support, to be able to get through this period more comfortably, for example, keeping in touch with their family, food, water, and adequate hygiene, internet access, psychological support in case of need and maintaining a distance of at least 1 meter between people who share the same environment in the house¹².

The practice of regular physical exercises which may minimize the emergence of problems that directly affect people's behavior should be encouraged, during social isolation in the pandemic period¹³. In this sense, the physical education teacher is classified as the professional who can provide guidance and monitoring, so that the practice of physical exercise is done correctly and safely^{14,15}. Among the strategies used to practice physical exercise in social isolation, classes, and orientations stand out remotely, i.e., physical education teachers provide monitoring and information on how to practice physical exercises through internet¹⁶. This practice should be part of people's routine, so they can improve cardiorespiratory capacity, reduce the risk of developing chronic diseases, control weight, and improve the quality of life¹⁷. It is emphasized that several studies have been proving that moderate-intensity physical exercise is effective to increase the immune system, through a reduction in inflammation processes and changes in cell concentrations, thus modulating positively the plasticity of the immune system¹⁸. These changes may protect the population against severe impairment generated by COVID-19 infection.

Although technology is part of several people's lives, it is important to consider the differences among individuals, mainly the elderly. It is known that aging presents an association with cognitive decline, making it difficult to keep up with changes that occur in technologic environment¹⁹. During quarantine, remote physical education classes must respect these differences to provide a better and safer experience for this public.

Conclusion

Physical exercise is a cheap, easy to access, and safe option to be incorporated into the routine of people who are in quarantine. The use of technology by the physical education teachers to monitor exercises deserve to be highlighted during this period to avoid virus spread. Social isolation loosening measures must be another challenge to keep people active without increasing the incidence of subjects contaminated and death rate. Routine testing must be encouraged in gym areas to diagnose and avoid social contact with symptomatic people. In addition, it is important to limit the number of individuals in common gym areas to ensure a minimum distance among physical exercise practitioners.

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