



Physical Activity to Fight a Sedentary Lifestyle and its Negative Effects Resulting from COVID-19-Related Quarantine

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ABSTRACT

Introduction: This research was motivated by new-normal stage in the aftermath of COVID-19, to demonstrate the need for physical activity, despite the quarantine. It will help maintain healthy bodies and relieve the stress caused by long periods of limited social contact. This study also provides a brief analysis of the existing choices to offer more effective distance counseling.

Aim: To demonstrate the significance of physical activity to improve and maintain health and physical well-being as ways to cope with the sedentary lifestyle caused by the COVID-19 pandemic.

Materials and methods: The method used in this research was the historical-logical to establish the historical tendencies of the problem and take the essence from logical, analytical-synthetic analysis, permitting a more detailed study of the bibliography used, as well as a documentary review for related data collection from official sites to structure the research.





Results: This research has broadened the study of Physical Culture, understanding the changes that emerge at the physical, mental, and emotional levels caused by quarantining. It determined its reality and effects, and how the everyday life can be affected.

Conclusions: This research demonstrated the significance of physical activity to improve and maintain health and physical well-being as ways to cope with the sedentary lifestyle caused by the COVID-19 pandemic.

Keywords: Physical activity, COVID-19, sedentary lifestyle, quarantining.

INTRODUCTION

Since WHO (World Health Organization) declared the pandemic status of COVID-19, the world has gradually known the new normal to live along with the virus. Slowly, new measures have been adopted to control the disease and continue to live while the possibility of contagion is reduced.

The area of physical culture has also been affected, namely recreation, physical culture, therapeutics, physical education, and sports. Because of the quarantine measures, every habit taken by individuals to keep active, especially the physical activity, has changed and adjusted. Consequently, a change in the way of living led to the deterioration of needs to such an extent that other mental and emotional obstacles have emerged due to constrained regular physical contact with acquaintances.

Therefore, this study focuses on how to maintain daily physical activity, and that it is necessary to assimilate the everyday changes, as they go unnoticed while affecting people indirectly, with no understanding of the origin of such daily frustrations after more than a year of pandemic.

This research aims to demonstrate the significance of physical activity to improve and maintain health and physical-mental well-being as ways to cope with the sedentary lifestyle caused by the COVID-19 pandemic.

MATERIALS AND METHODS

The study relied on documentary analysis and the sources that provided information about the state of physical activity in COVID-19 times.

Observation was useful to determine the main characteristics observed in the individuals under social isolation. The historical-logical method was used to reveal the process characteristics through time.





RESULTS AND DISCUSSION

COVID-19 is an infectious disease caused by the SARS-CoV-2 coronavirus recently discovered. The World Health Organization (WHO) declared it a pandemic following its spread in Wuhan, China, through Asia, Europe, and the Americas. Because of its rapid spread, authorities adopted policies and extensive measures to force social distancing and quarantining to prevent propagation. By restricting closed and crowded spaces, quite a few facilities like gymnasiums, restaurants, theaters, and other public areas closed their doors to the public, meanwhile, workplaces extended distance work, with people spending more time at home.

This situation has affected the physical and emotional health of the world population. A study done by the Beth Israel *Deaconess Medical Center*, USA, published a survey in which 90% of the individuals referred to having suffered emotional anguish due to the COVID-19 pandemic, as well as greater concerns over their loved ones, whereas 80% mentioned their frustration at some levels because their daily activities were being limited.

International specialists in psychotherapy have worked on various cases of people suffering emotional damage caused by the pandemic, particularly fear of contagion. A recent paper published the review of 62 studies about this issue. The metanalysis reveals that 33% of cases underwent symptoms of anxiety and depression, which were aggravated in the most vulnerable people.

An analysis of the factors that affect people's mental health shows that environmental alarmism, the informational policy, rumors, incapacity to transmit more positive and encouraging messages, and the negative effect on interpersonal relations and others' perceptions, are the most frequent. The tendency to stigmatize, perceive, and interpret others negatively as a result of uncommon behaviors, such as the lack of compliance with social distancing rules, or not wearing face masks, may lead to conflict and issues, in addition to a generalized suspicion attitude toward others. These symptoms are associated with anxiety over an uncertain future and possible quarantining.

The current sanitary crisis has a marked impact on the mental health of many people, and its control entails other measures outside the individual therapy, requiring an overall approach to the problem, including the cultural trends that trigger negative relational attitudes. The existence of an alarmist environment is quite evident, which does not favor mental health, especially for the most vulnerable.

Regarding the psychological intervention, it must be stated at three levels: emotional, cognitive, and attitudinal. Accordingly, this study shows orientation from





the positive psychology to maintain and optimize psychological well-being, according to Luis Oviedo Torro (2021).

- At the emotional level, it is necessary to reinforce empathy as an essential resource in interpersonal relations. The idea is to be in someone else's shoes, know that similar experiences can occur to different people, and strengthen the interest in others to build relations and ensure a positive affective atmosphere and lasting relationships. This attitude entails a discipline that avoids judging others and invites researchers to explore other possibilities to adapt to a new context in the future.
- At the cognitive level, it is necessary to stimulate people's attention, concentration, memory, writing, and reading. The minimum time out of this routine may reduce the levels of concentration. Perhaps, concentration and awareness creation drills help, besides, observation of all the natural environment, and the stimulation of the primary senses.
- At the attitudinal level, exposure to uncomfortable sensations over short periods and gradually is necessary. It is worth knowing that uncomfortable and negative sensations experienced by people are naturally produced by the human body under these situations, and produce stress. Individuals should learn that the body is prepared to experience stress, and on many occasions, it can withstand stress without causing a higher sensation of intensity.

Hence, it is important to increase the conducts that help think and interpret the surrounding better, to care for and protect human health. Therefore, it is necessary to learn that these attitudes are filled with activities that provide well-being, such as reading a book, planning a family movie night at home, fixing a good meal, feeling the body relaxed, and particularly exercise.

Experts from the ABC Medical Center in Mexico pointed out that it is necessary to recognize the symptoms and know how people feel to protect emotional health. In such cases, some advice is necessary.

- To know the feelings, it is important to be able to identify what is happening and notice the symptoms: anxiety, irritability, sadness, and the like.
- To incorporate a breathing or muscle relaxation technique.
- To avoid using substances with a stimulating effect, excess alcohol may become counterproductive.
- To preserve the contact with family and loved ones through social media, video conferences, and phone calls.
- To sleep during the regular hours.





- Inactivity is a foe of quarantining, which makes physical activity is necessary.

At present, along with COVID-19, another completely silent pandemic affects humans: physical idleness. Idleness has become a mental health problem worldwide, growing in every country, particularly in industrialized countries. A study done at the Rehabilitation Service of the Toledo Hospital Complex, in April 2020, surveyed 532 physicians to determine the impact of the pandemic on physical exercise and the influential factors.

The results are shown below:

Most individuals were women (64.7%), and almost half (40.8%) were under 35. The data showed that 48.9% had children and 29.3% were residents. Additionally, 84% performed one/several forms of physical activity before the quarantining, especially aerobics (86.8%), then strength and flexibility-balance (34.2 and 29.8%, respectively). The primary motive not to exercise was the lack of time.

The study found that 40.9% exercised 2-3 days/week, and the rest showed similar percentages (one or more than three days). More than half (56.6%) used 30-60 min/day, and the others (31.19%) consumed more than one hour. The exercising methods were online (2.8%), in-person (45.9%), and free (61.1%).

During the social distancing, 55.8% exercised less, especially due to the lack of equipment. The changes observed in every modality were statistically significant ($p < 0.01$), with almost similar percentages (65.7% aerobics, 41.1% strength, and 44.6% stretching-balancing). The study found that 44.1% exercised more than 2-3 days/week. More than half (51.1%) used 30-60 min/day, while others (38.5%) consumed less than 30 min. The training was online (52.1%), and free (61%). Exercising less during this period (bivariate analysis) was associated with age ($p < 0.01$), sex ($p < 0.037$), and having children ($p < 0.02$); whereas more exercising was linked to more sleeping hours ($p < 0.01$). (Hernández López *et al.*, 2021).

These results show a statistically high inactivity index; hence it is necessary to maintain physical exercise and ludic activity routines during quarantines, especially due to the benefits of the immunological system, non-communicable diseases like obesity, cardiovascular disease, respiratory disease, as well as psychosocial.

As the greatest offer of physical activity and exercises are outside the homes, and these services are unavailable now, adapting the homes, changing the modality from physically present to online training. Regardless of the negative effects of technologies, their utilization facilitates adherence to exercise during quarantine.

Today, physical activity is not a priority for the average citizen, lest amidst concerns grown under the current pandemic situation. But it must be that, as physical activity may help control COVID-19-related infections, and therefore,





improve and maintain the quality of the life of humans. Besides, physical activity is one of the healthiest ways to maintain wellness, since it enhances the functions of all the physiological systems of the body, and it also helps prevent and/or treat various mental and physical health conditions. Therefore, the findings of James F. Sallis and Michael Pratt coincide with the rationale for this study. Additionally, it will present four ways of easing the consequences of the pandemic thanks to the benefits of physical activity.

First, physical activity has the potential of reducing the severity of COVID-19. infections. It is linked to what occurs in the lungs during infection. The immune system detects the invading virus in the lungs and attacks it. The conflict between the virus and the immune cells causes inflammation. The swelling creates damage to the lung tissue that interferes with breathing and may turn serious enough to require medical intervention through mechanical respirators.

How can it be relevant to physical activity? When it is active, the muscles produce compounds that improve the functioning of the immune system and reduce the inflammation (Hojman, 2017). Hence, physical activity strengthens the two biological processes that react to the infection. Although the effects of exercise on COVID-19 patients have not been studied, the effects of physical activity on immunity, and inflammation (Campbell and Turner, 2018; Hojman, 2017; Jones and Davison, 2019; Lee *et al.*, 2019; Meneses-Echávez *et al.*, 2016; Miles *et al.*, 2019), and viral respiratory infections (Nieman & Wentz, 2019) are well-documented. Since muscles account for 30-40% of the total body weight, they can become a powerful ally to fight the impact of the infection, though only when the muscles are used. Moderate physical activity, like walking, has the best impact, but extreme exercise, like running in a marathon, temporarily reduces the immune function (Nieman & Wentz, 2019).

The potential for higher physical activity to reduce the number of infected people that require hospitalization and respirators might help reduce the level at which the medical care systems are overwhelmed by severe infection cases.

Secondly, physical activity is effective to prevent and treat heart disease, diabetes, and eight types of cancer (Powell *et al.*, 2019), which increase the risk of serious diseases and death among the people infected by a coronavirus. Although physical activity is widely recommended by the health authorities, the efforts to promote active lifestyles are minimum (Reis *et al.*, 2016). It makes perfect sense to stimulate people, especially the ones with chronic diseases to be moderately active to prevent diseases and reduce the severity of the illness after the infection. Because physical activity has immediate effects on the functioning of the immune system and inflammatory processes (Hojman, 2017), similar to taking a pill daily,





people can reduce the risk of serious viral infections and the risk of multiple chronic diseases by simply trying to comply with 150 minutes of physical activity a week of moderate aerobic activity (30 daily minutes of physical activity at home, or taking a short walk). It is not too late into the pandemic for people to benefit from moderate increases in their physical activity.

Third, stress symptoms will rise as the pandemic develops, as a result of threats to health, the loss of jobs, limited income, and social distancing. Fortunately, being physically active has important benefits to mental health, and encouraging people to be active might help many overcome continuous stress and prevent psychological diseases. Every session of physical activity reduces the symptoms of depression and anxiety (Basso *et al.*, 2017), so being active may become a partial serum against pandemic-related stress. To the ones already feeling anguished, being active is as effective as drugs and psychotherapy. (Powell *et al.*, 2019). The most commonly performed physical activity is walking; it is free, accessible to most people of all ages (CDC, 2018), and suitable for social distancing. (CDC, 2018).

Fourth, the body's response to psychological stress creates unbalances between cortisol and other hormones that affect the immune system negatively and cause inflammation. Therefore, psychological stress affects the underlying biological processes of the infection caused by COVID-19, but the restoration of cortisol balance is another mechanism by which physical activity benefits immunity and inflammatory processes. The most effective strategies to improve cortisol balance are physical activity and stress management (Adam *et al.*, 2017). Because the elders have altered cortisol physiology and that of the weakest immune systems, physical activity can be particularly relevant for this population with a high risk of acquiring COVID-19 (James F. Sallis, and Michael Pratt, 2021).

In that respect, WHO is currently working on an awareness campaign called #BeActive, whose purpose is to help the world population of any age and physical capacity to stay as active as possible, acknowledging that it is hard for many to keep practicing the usual physical activity, particularly those with the highest levels of inactivity. To improve health and well-being, WHO recommends the following levels of physical activity depending on the age:

Babies less than a year

- Every baby should exercise several times a day.
- The babies who are still unable to walk by themselves should stay face down for at least 30 minutes (day in and when awake).

Children less than five





- Every little child should do some type of physical activity at any level of intensity for at least 180 minutes a day.
- 3-4-year-old children should at least use 60 minutes of their time to perform moderate or high-intensity activities.

Children and adolescents (5-17)

- Every child and adolescent should do physical activities with moderate or high intensity for at least 60 minutes.
- Exercising must be done at least three days a week, which should include activities that strengthen muscles and bones.
- Exercising for over 60 minutes brings about additional health benefits.

Adults over 18

- Every adult should work out for at least 150 minutes a week with moderate intensity, or at least 75 minutes a week with high-intensity exercise.
- To get additional health benefits the adults should increase their exercise time to 300 minutes a week, with moderate physical activity or equivalent.
- To improve and maintain the health of the locomotor apparatus, exercising should be taken for two or more days a week with activities that strengthen the main muscle groups.
- Moreover, older people with motor problems should exercise three or more days a week to improve balance and prevent falls.

CONCLUSIONS

This study dealt with the new reality created as a result of the emergence of the pandemic. The research permitted a better understanding of the major novel obstacles that humans will have to face daily.

The situation generated by the emergence of COVID-19 and social distancing was portrayed in this research, as to how they alter the bodies of humans physically and mentally, to become aware of how to take better care of our species, and take more effective measures in that direction. Maintaining and satisfying the need for daily physical activities to keep the body and mind healthy and active.

This research demonstrated the significance of physical activity to improve and maintain health and physical well-being as ways to cope with the sedentary lifestyle caused by the COVID-19 pandemic.

This research has broadened the study of Physical Culture, understanding the changes that emerge at the physical, mental, and emotional levels caused by quarantining. It provided deeper knowledge about their reality and effects, and how the everyday life can be affected.





BIBLIOGRAPHIC REFERENCES

- Deschappelles Brunet, María Magdalena. (2020). *Orden y sintaxis de las referencias bibliográficas*. Conferencia del curso de verano Cómo Publicar en Acción. Universidad de Ciencias de la Cultura Física Manuel Fajardo. La Habana, Cuba.
- Colectivo de autores. (2021) *Educación física en tiempos de coronavirus y confinamiento: Análisis desde la experiencia*. Facultad de Educación Física de Segovia, Universidad de Valladolid. España. Revista Digital de Educación Física. ISSN: 1989-8304. <https://dialnet.unirioja.es/servlet/articulo?codigo=7475956>
- Corparmex Queretaro. (2021) *¿La pandemia ha afectado tu salud física o emocional?*: <http://www.coparmexqro.org>
- F. Sallis, James y Michael, Pratt. (2020) *La actividad física es fundamental en tiempos de coronavirus*. <http://www.uniandes.edu.co>
- Fundación Carlos Slim. (2021) *Covid-19 y como afecta la salud física y mental de las personas con obesidad*. <http://www.clikisalud.net>
- Hernández López, María, Ana B. Puentes Gutiérrez y María García Bascones. *COVID-19 ¿Cómo afecta a la realización de ejercicio físico en médicos? Medicina Clínica* Carta Científica. 155 (4) DOI: 10.1016/j.medcli.2020.05.014. <https://www.elsevier.es/es-revista-medicina-clinica-2-articulo-covid-19-como-afecta-realizacion-ejercicio-S0025775320303419>
- Rodríguez, J. H. (2020). Impacto de la COVID-19 sobre la salud mental de las personas. *Medicentro Electrónica*, 24(3), 578-594. <http://www.medicentro.sld.cu/index.php/medicentro/article/view/3203>
- Organización mundial de la salud. (2021) SANOS EN CASA – ACTIVIDAD FISCA. <http://www.who.int>
- Oviedo Torro, Lluís. (2021) *El COVID-19 no solo daña la salud física: así afecta nuestras emociones y relaciones con la gente*. <http://elfinanciero.com.mx>
- Pacheco, R. J. P., Enríquez, J. M. O., Viteri, S. P., Bravo, N. A. O., & Sotomayor, L. F. X. N. (2020). Por una Educación Física virtual en tiempos de COVID. *PODIUM - Revista de Ciencia y Tecnología en la Cultura Física*, 15(3), 705-716. <https://podium.upr.edu.cu/index.php/podium/article/view/1002Reyes>,
- Alixon y Carlos Romero. (2021) *Educación física en tiempos de pandemia y confinamiento. Experiencias pedagógicas y reflexiones*. Universidad Adventista de Chile. Universidad de Cundinamarca, Colombia. ISBN: 978-956-401-974-1. https://www.researchgate.net/publication/349059570_Educacion_Fisica_en_tiempos_de_pandemia_y_confinamiento





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