



# **The Impact of Physical Activity on the Psychological Welfare during the COVID-19 Pandemic- A Review Article**

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## **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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## **ABSTRACT**

The COVID-19 epidemic and its accompanying public health limitations are having a growing negative influence on mental health, and steps must be done to reverse this trend. Although there is a well-established link between physical activity and mental health, space and facilities for physical activity are restricted during the COVID-19 epidemic because of different constraints. Based on the most recent study findings released in 2019–2021, this article investigates the association between physical activity and mental health during the COVID-19 pandemic. First, physical activities during COVID-19, particularly supervised activities, are beneficial to happiness and mental health. Second, during the COVID-19 epidemic, physical activity decreases people's anxiety, melancholy, and despair. Third, the intensity and frequency of physical activity are linked to mental health maintenance and improvement. Physical activity that is both intense and frequent is beneficial to mental health. Finally, this study suggests crucial research directions for the future. The corona crisis has handicapped all of us in more than one way and we had to force ourselves to live within the rigid norms the government had pushed upon us. The tight lockdown, the strict curfews, the curbing of any sort of dopamine-releasing factor. All of this made us feel like

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we were inmates in an institution, and the feeling of helplessness crept in despite the elaborate measures the government took to make us feel that this was for the 'greater good of our communities. The lockdown made us all couch potatoes endlessly switching channels on our television, scrolling on our exuberant number of social media applications or reading the same news over and over again, keeping track of the extent of the spread of the deadly virus hoping to find something worth spending our already wasted time on. In time this has opened a portal to which we never batted an eye and made us realize how precious our freedom is to us. This article is a small glimpse of how precious our bodily movements are to us, however minuscule or ordinary they might be.

*Keywords: COVID-19; physical activity; psychological impact; mental issues.*

## 1. INTRODUCTION

In December 2019, Wuhan saw an epidemic of novel coronavirus pneumonia (Hubei, China). Coronavirus illness (COVID-19) began to spread at a pace so fast that in a blink of an eye it had spread to a large number of countries and took the whole world by surprise in early 2020, initially in China and then fast around the world, with Europe as a whole, and some nations in particular, such as Spain and Italy, becoming heavily affected by the pandemic's infection and mortality [1]. This unusual and quick epidemic has resulted in severe mental health problems like stress, overthinking, and melancholy for both medical professionals and the general public as well as other professional populations such as teachers, lawyers, professional athletes, school-going children, daily wage workers, etc.

Physical activity or exercise is well-known for improving and/or maintaining physical and mental health, as well as improving the overall quality of life. To explain the good effects of physical activity, many physiological and psychological processes have been proposed. Exercise may raise hormones, endorphins, and Brain-derived Neurotrophic Factor (BDNF) levels in the body, making people feel happier and less stressed. Furthermore, exercise provides a psychological "time out" from the stressor, and regular exercise enhances self-efficacy to manage the challenges they confront.

The COVID-19 epidemic has brought the importance of the physical activity to the forefront of people's minds. Throughout the pandemic, the news media has reported extensively on the beneficial effects of physical activity on physical health and persons with moderate coronavirus infection. Regular and long-term physical activity boosts immunological surveillance, functions as an anti-inflammatory agent, lowers the chance of acquiring a variety of chronic illnesses, and

improves overall physical health and disease prevention and resistance.

## 2. THE ECONOMIC IMPACT WHICH EVENTUALLY LED TO THE DRASTIC PLUNGE IN THE PHYSICAL MOVEMENT WHICH FURTHER RESULTED IN PSYCHOLOGICAL STRESSES AND ILLNESSES

The corona crisis, resulted in the development of a huge number of stress-related disorders, for instance, quite a several families have gone into a bitter financial crisis due to the lockdown. The lockdown has put the whole economy on a standstill and had slowly started going into a recession. This affected a vast majority of the population especially the middle class and the lower middle class who solely depended on their everyday bread from daily wages, and had burnt through their savings just to eat and buy essential goods [1].

There has been a study that states that men had developed a slightly higher percentage of mental illness than their female counterparts during the recent pandemic. Researchers have said that there is a good probability that has happened as usually men are the sole breadwinners of the household. They are held as well as themselves responsible if they can not provide for their families in times of dire circumstances. Such individuals may have experienced traumatic stress. Traumatic distress is defined as acute anxiety and powerlessness felt as a danger to the bodily autonomy of the individual and everyone around them [1].

The curbing of physical activity did not assist in this stressful situation even in a teeny tiny way. A large number of the population do some of the other physical activity, whatever it may be, a game of football, basketball, cricket, tennis,

table tennis, squash, going for a brisk walk, a run, or even going to the gym for a workout. Already has been proved that any sort of bodily movements of any nature has always been, and will continue to be always constructive.

The cutting of such daily stress busters, mood uplifting activities have affected the personal lives of many individuals on a physical level which has directly affected their mental wellbeing which has led to mood-related disorders as well. There had been a rampant epidemic of depression, anxiety, and such mood-related disorders during the corona crisis. This may have happened due to an amalgam of 'accumulation of stress and frustration and no way to get away from the stress [1].

### **3. THE IMPACT OF PHYSICAL ACTIVITIES ON DIFFERENT CATEGORIES**

General population:

What classifies as a physical activity?

Is it only confined to some kind of sport like basketball, football, cricket, tennis, etc., or is it going out for a run or going for a workout at the local gym, or is it attending a Zumba/aerobic class, or is it going for a yoga session? It can be anything you want it to be.

In the same way, many people don't like or are less fortunate individuals who cannot do these leisure activities due to some financial or physical condition which do not permit them the luxury of such activities [2].

So, physical activity cannot be confined to all the things mentioned above, for some individuals it can be taking their dog for a walk, or going to the market to buy groceries every day, or it can be the daily walk from home to the train station or bus station, or it can be delivering some goods, etc.

So once these small things which people did in the disguise of a physical activities are cut off from their lives all of a sudden as it did during the covid crisis. These individuals didn't know how to deal with it. It was sort of like hampering somebody's daily routine, initially, the individual will feel relaxed but as time passes he/she will become restless and will

want to go back to their routines and this also has been proved time and time again [2].

### **4. THE IMPACT ON PHYSICAL ACTIVITY DURING THE COVID PANDEMIC AND PROFESSIONAL ATHLETES AND ORGANIZED SPORTS**

The recent corona crisis, which started early in the year 2020 has had a huge impact on the lives of various individuals in the various sector had been affected. The sector which we will be mentioning here is the organized sports sector which took a devastating hit during the pandemic and had come to an absolute for a very long period.

All organized sports may it be individual or team sports ad been suspended indefinitely as well as all social activity.

It has been stated time and time again that physical activities have established themselves in a tremendously essential position in the overall well-being of an individual, and have a positive effect on mental illnesses such as depression and anxiety.

Team sports have been said to boost the confidence, the integrity of the individual, boost social interaction and social skills, boost self-esteem and self-worth, increase their communication skills drastically, and have a feeling of acceptance. This drastically reduces depression and anxiety levels and proves that individuals who play team sports are less likely to develop mental health issues than individuals who individual sports.

### **5. PEOPLE WHO PLAY SPORTS (ATHLETES) VS PEOPLE WHO DON'T (NON-ATHLETES)**

Furthermore, if we dive deep into the spectrum of the effect sports have on the total well being of a person, it has been established in many findings that athletes who play any sort of team sport or even an individual sport are less likely to develop any mental illness like depression and anxiety in comparison to those who don't play any sports regularly. According to many studies it has been proved on multiple occasions that athletes are better at social interactions than non-athletes. Not being able to interact with your peers can also affect the individual's mental status indirectly and lead to anxiety. Sports not

only helps us deal with victory but also teaches us how to deal with failure gracefully and be open to criticism, known as constructive criticism. This level of mental stability is one of the principles on why anybody should take up a sport. You can phrase it as 'sports might be the immunity to mental health issues, despite all the advantages sports has on the total wellbeing of a person, athletes also fall to the prey of mental illnesses. But sports bolsters the mind against mental illnesses [3].

## **6. EFFECT ON THE MENTAL STABILITY OF THE COMMON RESIDENTS OF A GIVEN AREA BY STOPPING ORGANIZED SPORTS**

Furthermore, this has affected the normal working-class population in more than one way. As all organized sports had been suspended due to the deadly virus, the general population was left dumbfounded as a huge chunk of the working-class population used to invest time in watching organized sports and it used to keep them occupied with something to constantly think about. With the disappearances of all organized sportspeople had nothing to go to or to keep themselves occupied with, all the hours they invested of their weekends and during their daily lives in this activity had suddenly been reduced to nothing. A lot of people who were hardcore sports fans had to suddenly pick up something different to do with their past time. A lot of people coped up with this change quickly, but a lot of people couldn't come up with something as exhilarating as watching their favorite football team win a match by scoring a goal in the last minute of extra time, or their favorite tennis player win an unwinnable set. This became an issue with a certain set of people who had hours on the weekend free with nothing to do, as there is a saying "an empty mind is the devil's workshop". This allowed some people of this category to become prey to mental health issues [4].

Watching organized sports is not only a matter of personal involvement but involves communities altogether. They spent time on the weekend watching the matches together and spend the week analyzing the results of the games that were conducted on the weekend, this is a great pastime for a lot of individuals including myself. Having organized sports on the weekends allows social gatherings as well and provides an excellent pass time as well as a stress buster [4].

Individuals who had failed to pick up some other hobby in the meantime might have suffered mental illnesses.

## **7. THE TRIAD OF REST, BODILY EXERTION, AND PSYCHOLOGICAL WELLBEING DURING THE COVID-19 PANDEMIC**

Sleep is an integral part of our lives that ensures the total wellbeing of an individual, which includes the physical as well as the mental realm. An adequate amount of sleep helps our body repair itself and helps in a speedy recovery, not only does it help our body repair itself, but also helps our mind relax and keep us at bay from all the distress and various other illnesses [5-6].

Due to the corona crisis, there has been a reduced amount of exposure from the sun which is an essential component for us to maintain our circadian rhythm i.e., our sleep-wake cycle. With the disturbance of our circadian rhythm, there has been reported disturbance of sleep, in individuals. Further stresses such as unemployment, economic instability, stoppage of education, solitude, have increased the general population to the risk of mental illnesses.

Furthermore, the curbing of physical activities due to the restrictions of movement imposed by the government has confined the whole population to their households. This reduction of physical activity due to the lockdown has had a major role to play with the disturbance of sleep patterns in a large number of individuals [7].

We all know, and it has been proved staying physically fit i.e., doing some sort of physical activity improves the quality of the sleep of an individual directly. Hence enhanced sleep quality improves the symptoms of depression and anxiety.

With a lack of physical activity during the lockdown, there have been reports of increased sleeping disorders like insomnia, narcolepsy, and increased reports of depression and anxiety as well. This is solely due to the cracks in our body's defense system against mental illnesses.

## **8. FACTORS THAT MAKE PHYSICAL ACTIVITY DIFFICULT**

Physical activity can help people cope with the epidemic by lowering their stress levels,

improving their physical and mental health, and improving their overall quality of life. Physical activities, both planned and spontaneous, are crucial explanatory factors for personal wellbeing, whether before or during the lockdown. During the COVID-19 shutdown, we first investigate the issues that obstruct normal sports or activities.

## 9. EXISTING HEALTH CONDITIONS

Physical health concerns are expected to result from a lack of physical activity during the epidemic. Sedentary behavior and physical inactivity can lead to persistent and high-level inflammation, making people more vulnerable to COVID-19's most severe form. When infected with the COVID-19 virus, patients with immunosuppression and persistent low-grade inflammation (particularly the elderly) had a more severe illness and increased death, according to studies. As a result, moderate physical activity is especially beneficial, as it can boost immunity and give immunological protection [8].

Regrettably, pre-existing health problems can make physical exercise difficult, increasing the chance of infection. If infected, the severity of the sickness will be significant, resulting in even more serious health concerns.

## 10. LOCKDOWN, SELF-ISOLATION, AND QUARANTINE

Quarantine, self-isolation, and confinement have all hampered the growth of sports and other activities due to a lack of facilities and time limitations. Non-physical workouts like positive thinking activities, meditation, and art, as well as mild physical activities like walking, grew increasingly popular as the pandemic lockdown cycle lengthened, whereas heavier physical activities like cycling, hiking, and jogging became significantly less popular. Some people's motivation to exercise may be harmed as a result of quarantine, self-isolation, or lockdown. Throughout times of quarantine, self-isolation, and lockdown, the population's overall physical movement is said to be drastically reduced, with severe negative impacts on people's quality of life and well-being [9].

## 11. NATURE, DURATION, AND REGULARITY OF PHYSICAL ACTIVITY

The pandemic's constrained group activities have generated mental health

issues, emphasizing the significance of physical activity through alternate types of exercise, particularly home workouts, as a coping technique in such trying circumstances [10].

## 12. PHYSICAL ACTIVITY TYPES

Almost any sort of physical activity is beneficial, and both physical exercise and relaxation training can assist to mitigate the detrimental effects of stress on one's physical and mental health [10].

Pranayama, an ancient kind of exercise that focuses on both the body and the mind, has been demonstrated to be particularly beneficial in increasing mental well-being by promoting psychological reappraisal and autonomic stress-coping behavior. All styles of yoga are good for stress alleviation in the early stages.

During the COVID-19 pandemic, the frequency of physical exercise may not have the same good influence on mental wellbeing, however greater physical activity is likely to be related with better levels of mental health. The amount of people who exercise is a moderator of the association between stress and general wellbeing, and general condition alone cannot moderate the stress-mental-health relationship [11-15].

## 13. DEGREE OF PHYSICAL ACTIVITY

Physical exercise intensity has a variable effect on mental health. During the epidemic, people who engaged in more vigorous exercise activities reported higher mental health and well-being. The step counting program, on the other hand, was not linked to mental health ratings.

## 14. CONCLUSION

This article summarizes the tremendous benefits that bodily activities have on our overall wellbeing i.e. the physical realm as well as the mental realm. Facts also emphasized the fact that physical exertion has on the overall development of any individual, may they be a senior citizen, a child, or even an adolescent. This article has added on the paramount number of articles that have already been written, and yet again has proved that physical activities only have positive outcomes which, greatly outweigh the drawbacks.

## DISCLAIMER

The products used for this research are commonly and predominantly used products in

our area of research and country. There is no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by the personal efforts of the authors.

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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