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Physical Exercise as a Means of Managing Covid-19; an Insight Review

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Abstract

The following document provides important information that everybody know about physical exercise as a means of managing COVID-19. It addresses the health benefits of physical exercise on our body's immune system, and stress reduction. Already today in the entire world, coronavirus is now the leading causes of morbidity and mortality. It kills thousands of peoples per day worldwide and continues its impact on the governments and the society. Nowadays it is the greatest public health problem in most countries in the world. Since its identification on Jan, 7 by the chines scientists named the pathogen as a novel coronavirus.

In the current situation COVID-19 is rapidly spreading worldwide and the number of cases and deaths are rising up speedily. The spread of the virus is a headache to the government in general and the society in particular. The nature of the virus disallowed contacting with one another, working together, meeting, and other activities the majority of government and private business organizations are enforced to discontinue their work. The growing burden of the virus would place millions of jobs at risk an additional 8.8 million people in working poverty around the world. The danger of the disease and loss of employment leads the majority at stress. A chronically stressed person impairs the organism's ability to mount a strong immune response with a resultant increase in morbidity and mortality.

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Introduction

Health is a state of complete physical, mental, emotional, social and spiritual wellness not merely the absence of disease or infirmity. [1, 2] Nowadays our world is challenged by the corona/COVID-19/ pandemic. The World Health Organization (WHO) Declared a pandemic become a global emergency on 11 March 2020, COVID-19, given its impact on the entire world population and the economy. [10] In the current situation COVID-19 is rapidly spreading worldwide and the number of cases in all of the world's country is rising with increasing pace in several affected areas. The number of confirmed COVID-19 cases has risen rapidly; the mortality rate varies across country to country based on the measures taken by the individuals in particular and the government in general. To date, there have been nearly 838,924 deaths, with approximately 24,854,140 people infected and 17,710,802 over recovered from the disease across the world. [56, 64] It has the potential to reach a large proportion of the global population. Some estimates suggest that 40-70 per cent of the world's population could become infected. [13]

The spread of the virus encouraged social distancing which led to the shutdown of financial markets, corporate offices, businesses and events. [14] Several sources are predicting a fall in global growth due to the direct effects of the COVID-19 outbreak. The global economy may enter a recession at least in the first half of the year 2020, when adding the direct and indirect effects of the crisis.[6-9] In a strongly connected and integrated world, the impacts of the disease beyond mortality and morbidity has become apparent since the outbreak. [7] The sudden economic disruption caused by COVID-19 is not only destructive but also has spillover to the (travel industry, hospitality industry, sports industry, oil, import-dependent countries, financial sector, financial markets, Event industry, entertainment industry, education sector etc. are highly affected areas by COVID-19. [14] ILO estimates global unemployment between 5.3 million and 24.7 million. [34]

When the people confronted by the horrific coronavirus feeling of anxiety, sadness, depression, anger and fear led to insomnia, gastrointestinal upset, headache, muscular tension and the likes are occurred in general physiological and psychological disorders are happened on the societies. [2] With the continuing burden of the virus the majority of the government in the world enforced to announce state of emergency, staying at home as a basic means of limiting peoples exposure to the virus. Prolonged home stay has its own adverse effect on the society as sedentary life style continues hence lower energy expenditure escalates the tendency to chronic conditions as well as the stress levels of every individual is increased because of the mortality and morbidity rate of the disease and fear of unemployment.

So this insight review helps us to know the benefits of regular physical exercise on immune system development and stress reduction to manage covid-19

Needs of Exercise

Health is gained and maintained by exerting self-responsibility for reducing exposure to health risks and for maximizing nutrition and exercise. [2] Exercise is the key to good health and fresh mind. [15] A large body of evidence supports regular physical exercise helps to build healthy bones and muscles improves muscular strength and endurance, cardiovascular system, weight loss or maintenance, prevent aging, reduces the risk for developing chronic disease and merely enjoyment. [59-63] Regular physical exercise boosts the immune system and helps prevent "diseases of affluence" such as cardiovascular, type II diabetes, and obesity [16, 17, and 58]. Evidence showed that people who lead active lifestyles are less likely to suffer from illness and more likely to live longer.[2, 57]

Physical Exercise as a Stress Reduction

Stressful life events and the negative emotions disturb the central nervous system, endocrine system, immune system [38] and cardiovascular disorders.[39] A variety of studies have shown that Stress can impair the functions of the immune system. [2, 15, 26, 29, 30] As news reports about COVID-19 increase, it's not uncommon to become more anxious. Stress reduction is important to maintaining a healthy immune system. Increases in psychological, social, and spiritual stress can occur with disruptions to one's life and routine, social isolation, and interpreting the meaning of current

events. [18] Stigma towards distinct groups and constant exposure to the media due to COVID-19 concerns can also increase stress, thus weakening the immune system. [19] Psychological stress increases the susceptibility to inflammatory disorders, including those of infectious etiology, [20- 21] as well as adversely affect immune and inflammatory responses.[22-25] The defense mechanisms encompass several systems, all of which are influenced by stress. [26, 40] Acute stress accelerates both the resolution of an infection (COVID-19) [27, 28]

Stress relief is one of the most common mental benefits of exercise. Regular Exercise can help to manage physical and mental stress. [15, 29, 30] Exercise also increases concentrations of norepinephrine, a chemical that can moderate the brain's response to stress. Being active greatly causes a reduction in tress levels. [30]

It may also help prevent stress and depression, increase quality of sleep and act as a non-pharmaceutical sleep aid to treat diseases such as insomnia, help promote or maintain positive self-esteem, and improve mental health. [31]

Continued levels of stress, as found by COVID-19 pandemic may diminish the ability to respond to infections possibly by the productions of the anti-inflammatory protein cortisol. Studies have shown that individuals with increased stress are more likely to become infected with a virus so regular physical exercise are the best ways of managing stress or helpful for better immune function.

Exercise releases endorphins, which create feelings of happiness and euphoria. [32] Physical activity increases the level 3–10 times. [33] Experiencing stress can change physiological means nerves, endocrine (hormone), and immune system. [2] It also contributes to illness by inducing individuals to engage in unhealthy behavior in order to manage stressful feelings. Structured physical exercise at different intensities and duration has been shown to improve mental health

General Facts about Physical Exercise and Body's Immune System

The immune system is critical for human health and well-being, as it helps coordinate the body's response to the infections are high, if left unaddressed could cause illness or death. [35] The mechanisms are associated with the communication between the nervous, endocrine and immunological systems, suggesting autonomic ways and immune response modulation. [46, 57] The available evidence shows that exercise has important modulatory effects on immunocyte dynamics and possibly on immune function. [36, 37] Immune system cells, when exposed to small stress loads, develop tolerance mechanism.

The immune system is also key elements in making sure that you can recover from an infection. During the current COVID-19 pandemic there are a few things that the individuals can do that may improve the function of their immune system.

Physical activity strengthens the immune system and overall from both a shortterm and a long-term perspective is a highly beneficial way of spending a period of quarantine or stay at home. [12, 57]

It is generally accepted that prolonged periods of intensive exercise training can depress immunity, while regular moderate intensity exercise is beneficial. Undoubtedly, exercise is a powerful behavioral intervention with the potential to improve immune function and health outcomes in the healthy, the obese, and the elderly, as well as in patients specifically having CVD, diabetes, or cancer. Improvements in immunity, resulting from regular exercise of moderate intensity, may be due to reduced inflammation, enhanced immunesurveillance, reduced psychological stress, and improved overall well-being. [41, 42, 43, 44, 45] There are data that show moderate to vigorous Exercise increases the release and circulation of immune cells important for the ability to respond to infections.

The Relationship Between COVID-19, Respiratory System and Physical Exercise

The primary functions of the cardiovascular and respiratory systems are to provide the body with oxygen (O2) and nutrients, to rid the body of carbon dioxide (CO2) and metabolic waste products, to maintain body temperature and acid-base balance, and to transport hormones from the endocrine glands to their target organs.[50] Current data shows that individuals with chronic conditions such as cardiovascular diseases

(CVDs), diabetes, cancer, chronic respiratory diseases and lung diseases are at higher risk of severe complications from COVID-19. [47] Cardiovascular disease (CVD) itself is a major cause of morbidity and mortality.The mortality rate of CVD is 45% followed by respiratory diseases, 22% of all NCDs deaths, respectively. [48]

Exercise training is important for the improvement of cardio-respiratory efficiency, work performance and the functioning of other systems. [2, 49] Regular physical exercise can be a practical means to achieving numerous health gains, either directly or indirectly through its positive impact on other major risks (NCDS), particular high blood pressure, high cholesterol, obesity, and stress.[15-17,31, 49] In general physical exercise is associated with health promotion as well as prevention of chronic-degenerative diseases. [51, 52]

It is well established that regular physical exercise improves heart and lung functions relatively quicker, which reduces susceptibility to respiratory illnesses and improves immune functions,reduce stress along with many other benefits not directly related to COVID-19. In addition changes in diet and reductions in physical inactivity levels increase resistance to insulin. [17, 31]

During exercise the smooth muscle relaxes, making the airways wider reduces resistance to air flow and aids ventilation. Exercise increase the size of our coronary arteries and reduces clogging due to atherosclerosis. Exercise also increases the efficiency of our bloods oxygen caring capacity and our muscles uptake of oxygen

Physical Exercise and Social Distancing during the COVID-19 Pandemic

World health organization recommends that, Physical distancing is very important to slow the spread of the virus. [53] Depending on the impact of the epidemic and the local epidemiological situation. [54] This is achieved by minimizing contact between potentially infected individuals and healthy individuals.While doing physical exercise it is critical for reducing the risk of transmission of the disease. [55] Individual social distancing, avoiding shaking hands, avoiding crowded mass gatherings, are a preventive measure to tackle the transmission of the virus. So pass your time at home, try an indoor workout.

Performing physical exercise the way you can follow social distance and the local and state government guidelines.Those under "shelter in place" orders should avoid gyms altogether and exercise at home or in their neighborhood.

Concluding Remarks and Recommendations

Research shows that only moderate, exercise is sufficient for good health. The chance of dying from heart disease, cancer, hypertension, diabetics, CVD and several other diseases greater for individuals with sedentary life style than those who engaged in regular physical exercise. Since exercise develops our body's immune system and reduce stress, the chance of morbidity and mortality by both infectious and none infectious disease can deteriorate.

As noted in the previous sections, regular physical activity benefits many different body systems. Doing regular physical activity can help you look better by controlling your weight, building your muscles, and helping you develop good posture. Regular physical activity also produces changes in your body's organs, such as making your heart muscle stronger and your blood vessels healthier. These changes improve your cardiorespiratory endurance and wellness and reduce your risk of hypokinetic diseases, especially heart disease and diabetes. Since COVID-19 is a respiratory disease. WHO strongly believes that nearly 80% of premature diseases can be averted by cost-effective interventions like regular physical activity (at least 30 minutes of regular, moderate-intensity activity every day). Most importantly, regular activity can improve your quality of life. A minimum of 30 minutes a day can allow you to enjoy these benefits. In this present day be take care of physical distancing and hygiene to create free from COVID-19 pandemic world.

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