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Weight Gain and Obesity during Quarantine due to COVID-19

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Coronaviruses are a large family of viruses that can infect animals and humans. This family causes a range of respiratory infections in humans (Mattioli *et al.*, 2020b) with symptoms from the common cold to more severe illnesses such as Middle East Respiratory Syndrome and Acute Respiratory Syndrome. COVID-19 is one of the new cases of coronavirus, with the possibility that it can be transmitted to humans in this new strain (Aghili *et al.*, 2021).

The emerging virus and its aftermath disease were unknown until the recent outbreak in Wuhan, China in December 2019, but since then it spread rapidly in China and other parts of the world (Sánchez *et al.*, 2021). The incidence of the COVID-19 disease, which has so far spread to 218 countries and regions around the world continues to rise, and the disease continues to claim victims worldwide (Mattioli *et al.*, 2020b). As a result, governments have imposed many

restrictions, including house quarantine and maintaining social distance to prevent the spread of the COVID-19 virus as much as possible (Wen *et al.*, 2021).

The prevalence of COVID-19 and lifestyle changes have greatly reduced the physical activity of family members, while studies have shown that coronary mortality is 40% higher in obese people than in the general population. People with body mass index (BMI) above 30% are more likely to get the COVID-19 virus than fit people (Mediouni *et al.*, 2020). Being overweight causes clogged arteries, chronic inflammation, and difficulty in circulating blood, all of which weaken the immune system and lead to deadly diseases such as COVID-19. In addition, being overweight puts pressure on the chest diaphragm and makes breathing more difficult. COVID-19, on the other hand, causes shortness of breath by involving the lungs, making obesity and lung involvement more dangerous for

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the patient (Zeigler, 2021).

Normally, it is recommended that people, especially children and adolescents, do not use electronic devices for more than two hours to prevent immobility and permanent sitting, but in the COVID-19 epidemic, the time to use these devices has reached five hours (Mattioli *et al.*, 2020b). There is a risk of obesity and overweight during the corona for all members of the family, especially for children due to not going to school and inactivity (Zachary *et al.*, 2020).

In addition to sedentary eating habits, the COVID-19 epidemic has become widespread in families. Consumption of sugary and sweet foods, consumption of high-fat and high-salt ready foods such as fast foods and eating energy-free foods without nutrients, has increased more than before (Mattioli *et al.*, 2020a). On the other hand, the consumption of fruits and vegetables in different age groups, especially children, has greatly decreased (Mattioli *et al.*, 2020a).

One of the major problems that greatly affect people's health is weight gain due to physical inactivity, as well as excessive use of food due to neurological problems caused by home quarantine (Mediouni *et al.*, 2020). In fact, staying at home for long periods of time, preparing food items in large quantities, inactivity due to staying at home, as well as anxiety and stress of this unknown disease, increase the uncontrollability of food consumption and ultimately increase weight and related disorders in different age groups (Sánchez *et al.*, 2021). Quarantine is a new experience for some communities, including Iranians. Effects such as impatience, uncertainty about the state of the disease, loss of freedom and separation from family and friends, as well as the study of morbidity and mortality in the world and the country and the red situation in many areas may affect a person's psychological state and increase nervous appetite. Stress conditions stimulate cravings for carbohydrates, which may lead to weight gain and obesity, which in turn increases the risk of COVID-19 complications (Cava *et al.*, 2021). On the other hand, the availability of a lot of food at the quarantine site, and the reduction of

traffic and physical activity in the environment outside the quarantine strongly affects the lifestyle and increases body mass followed by obesity (Cava *et al.*, 2021). Regular physical activity has proved to help prevent and treat non-communicable diseases such as heart disease, stroke, diabetes, and breast and colon cancers as well as high blood pressure, overweight, and obesity (Marzban *et al.*, 2021).

Obesity is a risk factor for immune-mediated diseases and some inflammatory diseases, including atherosclerosis and psoriasis, which causes a decrease in the body's immunity to infectious agents (Zeigler, 2021). Weight gain and obesity are also undesirable factors in people infected with COVID-19 (Wen *et al.*, 2021). In this scenario, obesity may lead to more vital signs and symptoms. Intubation of obese patients is very challenging and diagnostic imaging also becomes more difficult (Aghili *et al.*, 2021).

Given the lack of definitive treatment at present to control COVID-19 disease and the uncertainty of how long people around the world will engage with this uninvited fatal guest, the only effective solution seems to be home quarantine and hygiene tips. It should be noted that home quarantine can directly affect lifestyle patterns, including eating habits, access to food, dietary attitudes, and poor nutrition observance, leading to weight gain. Risk factors for weight gain during quarantine include inadequate sleep, post-dinner snacks, lack of dietary restrictions, eating in response to stress, and lack of physical activity. Therefore, it is important to follow a proper diet plan to control weight with attention to psychological conditions in quarantine.

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