

Editorial

Tale of the double pandemics, COVID-19 and obesity: a never-ending story

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It has been almost two years since we have been shocked by the COVID-19 pandemic, which initially started in Wuhan, China, on December 31, 2019. It was not long before the World Health Organization (WHO) finally declared it as a global pandemic on March 11, 2020, after announcing it as a public health emergency of international concern (PHEIC) on January 30, 2020. Since then, we can see the pandemic accelerated in most countries all over the world. Globally, as of 4 December 2021, there have been 270,031,622 confirmed cases of COVID-19, including 5,310,502 deaths.⁽¹⁾

Due to the COVID-19 pandemic, a number of non-pharmaceutical interventions colloquially known as lockdowns have been implemented in numerous countries and territories around the world. The results of the pandemic lockdown have instigated another major concern, i.e. obesity. Overweight and obesity are defined as excessive or abnormal fat accumulation that may impair health. Based on the WHO classification for adults of both genders and all ages, overweight is defined as a body mass index (BMI) over 25 kg/m² and obese as a BMI over 30 kg/m².⁽²⁾

COVID-19 has ubiquitously proven to be a major challenge for people struggling with obesity as the unfavorable effects of excess body weight in the course of SARS-CoV-2 infections have been mainly attributed to the metabolic perturbations and chronic inflammation of the adipose tissue leading to impaired immunity

(blunted macrophage activation, impaired B and T lymphocyte responses) and more severe clinical outcomes.⁽³⁾ To make the matters worse, the COVID-19 pandemic has taken place at a time when there are around 2 billion overweight adults, of whom 650 million are considered to be affected by obesity (BMI \geq 30 kg/m²). That equates to respectively 39% and 40% of adult men and women aged 18 or over who are overweight, with 13% obese.⁽⁴⁾ To top it up, the lockdowns do force us to stay at home to avoid crowds by practising social distancing and locking ourselves at home with limited outdoor activities, which ultimately leads to another undeniable pandemic, obesity.

The COVID-19 pandemic with its lockdowns has caused many to put on pounds. At the same time, obesity has emerged as a major risk for severe disease and death from the virus. In many countries, the interventions required to combat COVID-19 have resulted in severe socio-economic crises.⁽⁵⁾ Given the well-described relationship between socio-economic status and risk of obesity, a widening societal inequality propelled by the political interventions against COVID-19 might translate into an increase in obesity and metabolic diseases in groups with a lower socio-economic status.⁽⁶⁾ People of lower socio-economic status with limited income and resources prefer cheap and readily available and palatable foods, which are highly processed and promote high caloric intake beyond energy needs.⁽⁷⁾

Additionally, we can also closely associate the global pandemic with psychological stress, which is worsened by the socio-economic condition, which thus triggers more anxiety in many individuals who have been cooped up at home, with no social interaction, while embracing loneliness. The deterioration of psychosocial health leads to a negative effect of food-related behavior, such as food hoarding, impulsive eating behavior, and emotional eating.⁽⁸⁾ Not to mention that psychosocial stress may consequently elevate the energy intake as well as the risk of developing obesity in those who have been confined at home with minimal social interaction. The elimination of social eating practices could encourage a reduction in mindful eating, which might negatively influence dietary choices and promote overeating.⁽⁹⁾ Furthermore, the closure of gymnasiums and fitness centers, also the curtailment of various sports in practicing physical distancing makes the maintenance of active lifestyles more troublesome.

The disproportionate impact of COVID-19 on patients with obesity is now well established. (10-11) Patients with obesity and morbid obesity have a known increased susceptibility to viral infections.⁽⁵⁾ Obesity has been reported to lead to severe forms of COVID-19, including acute respiratory distress syndrome (ARDS), thus is strongly associated with a greater risk of advanced levels of treatment such as admission to intensive or critical care and invasive mechanical ventilation, and with death.⁽¹²⁾ The occurrence of obesity may also initiate other metabolic diseases by increasing the risks of developing obesity-linked comorbidities such as diabetes mellitus, and cardiovascular and cerebrovascular diseases.⁽¹³⁾

The prevalence of obesity is particularly high in some countries such as the USA where the total number of confirmed COVID-19 cases and deaths is one of the highest in the world.⁽¹⁾ People with BMI over 30 in the USA were reported to have increased risks of being admitted to the hospitals due to COVID-19 by 113%, of being

admitted to intensive care by 74%, and of dying by 48%.⁽¹⁴⁾ Similar numbers of mortality were also reported by Public Health England, with the risk of death from COVID-19 increasing by 90% in people with a BMI over 40.⁽¹⁵⁾ Sadly, this can also occur in the younger populations who suffer from obesity or overweight, irrespective of their ages. The World Obesity Federation recently showed further trends that the death rates from COVID-19 have been ten times higher in countries where more than half of the population is obese.⁽¹⁶⁾ A total of 191 countries with a complete univariate dataset (168 countries with a complete multivariate dataset) found a significant and positive correlation between obesity prevalence and COVID-19 case rate.⁽¹⁷⁾

These worrying developments have brought much-needed attention to the world's second pandemic, obesity, especially during the COVID-19 era. Therefore, understanding the mechanisms underlying the link between obesity and disease severity as a result of SARS-CoV-2 infection is crucial for the development of new therapeutic interventions and preventive measures in this high-risk group. More efforts should be made by the affected individuals who are suffering from obesity, in particular, and the respective governments, in general, to overcome this "bulky" pandemic.

To date, a total of 7,408,870,760 vaccine doses have been administered⁽¹⁾ but there has been no sign of the COVID-19 disappearing from this world yet. Although fewer cases have been reported after vaccination, but still, we will never know what is waiting for us in the year 2022 and beyond. The only thing that we can do is to live in this new "normal" as we did before COVID-19, familiarizing ourselves with more incoming lockdowns and staying healthy by restricting ourselves from becoming overweight. With that, we may be able to fight the pandemic, by remembering to always wear a mask when outside, keep a safe distance, clean our hands, and get vaccinated to protect ourselves and stop COVID-19 as well as to reduce obesity. 

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