

OPINION

The parallel lives of pandemics: COVID-19 and obesityVASILIKI EPAMEINONDAS GEORGAKOPOULOU^{1*}, IOANNIS G. LEMPESIS^{1*} and DEMETRIOS A. SPANDIDOS²¹Department of Pathophysiology, Laiko General Hospital, Medical School of National and Kapodistrian University of Athens, 11527 Athens; ²Laboratory of Clinical Virology, School of Medicine, University of Crete, 71003 Heraklion, Greece

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Abstract. The present article discusses the interconnectedness of coronavirus disease 2019 (COVID-19) and obesity as global health crises. The similarities between the two conditions are highlighted; these include shared risk factors and comorbidities, and the impact of obesity on the immune system. The present article also mentions the challenges faced in combating both pandemics, including misinformation and prejudice against obesity. It discusses the development of therapeutic medications and vaccines for COVID-19 and the potential of injectable incretin analogues for weight loss. Socioeconomic issues are also addressed, with obesity being more prevalent in lower socioeconomic groups and the cost of obesity treatments being a barrier for those in need. The present article emphasizes the need for comprehensive and sustainable solutions, including public health interventions, education, policy changes and equitable distribution of resources, to address both COVID-19 and obesity.

The interconnectedness of COVID-19 and obesity

In recent years, the field of medical research has been confronted with immense challenges and has achieved significant advancements with regards to coronavirus disease 2019 (COVID-19) and obesity, both of which are conditions that are forming global health crises with varying degrees of coverage, attitudes and actions (1-4). The interconnectedness of COVID-19 and obesity is addressed in the present article, which also highlights the complex nature of the interaction between these two prevalent problems in global health (1,2,5-10).

Although at first glance these pandemics appear to be distinct, further investigations reveal that they have some

striking parallels. Both COVID-19 and obesity are influenced by the same pre-existing health conditions and risk factors, such as an advanced age, a deteriorated socio-economic status and co-existing health conditions (2,11-15). Comorbidities, such as type 2 diabetes mellitus and cardiovascular disorders, as well as cancer, are typically the result of obesity, which contribute to unfavorable COVID-19 outcomes (2,16-20). Additionally, obesity influences the immune system, which has implications in the body's ability to defend against infections and, perhaps, the COVID-19 outcomes (20-22). COVID-19 also appears to influence the immune system and its responses (21-24). By developing an understanding of these parallels, it may be possible to increase resilience to both pandemics. Strategies for managing post-pandemic health should consider the long-term health consequences of COVID-19 and obesity, since lingering issues and chronic conditions may continue to exist after a pandemic has passed (12,13,25-27).

The battle against COVID-19 and the development of an arsenal of therapeutic medications and preventive vaccines became an example of a vigorous biomedical scientific community, as well as socio-political zeal to overcome a common threat (27). These attempts, however, did not remain unaffected by another emergence of the current era, misinformation, and the avoidance of evidence-based medicine from members of the public but also, unfortunately, from the biomedical scientific community. The COVID-19 vaccine was not unanimously popular as one would expect (28).

Notably, the world witnessed the miracles of other 'jabs' for obesity, the arising family of injectable incretin analogues, with a secondary, yet highly favorable outcome, resulting in outstanding weight loss comparable to bariatric and metabolic surgical procedures (29-32). Anti-obesity medications were the result of decades of research, proceeding at a much slower pace than those of COVID-19, demonstrating that wherever there is a will, there is a way (30). There is a possibility of prejudice against individuals who are obese both inside and outside of the scientific community. To combat this type of prejudice, as well as any other type of misinformation, it is necessary to first recognize obesity as a chronic and complex disease, rather than a lifestyle choice (33-35).

Socioeconomic issues appear to exist and affect the course of both pandemics, i.e., obesity being more prevalent in lower socioeconomic groups of societies and the wealthy individuals being able to purchase the costly 'obesity jabs',

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leaving these out of reach for individuals who are truly in need of either treating their diabetes or obesity with these drugs (36). The extraordinary results also led to a marked rise in the GDP of the country of origin, which is not to scrutinize, but appropriate to consider in a broader view of how health can shape economies and countries (37). Comparable was the situation for the growth of the pharmaceutical companies related to the COVID-19 pandemic (38).

What needs to be considered and learnt from these situations is that they both reflect the current era and societal situations, as well as biased opinions. Obesity, even though it has tremendous health and socioeconomic impacts, is not treated as such (39,40). However, as attributed to the writer of *Parallel Lives*, Plutarch, 'To find fault is easy; to do better may be difficult' (41). Both pandemics may teach humanity how to combat the next (non)-communicable one, from which there is still much to be learnt. After all, as C. Jung proclaimed, 'Man needs difficulties; they are necessary for health'; these challenges may lead the views of intertwined aspects of the complex landscape of human health to new horizons and responses (42). Based on the aforementioned observations and considerations, it can be concluded that two crucial aspects of global public health and related policies need to be reconsidered: Interventions and equity. Public health interventions, including education, policy changes and community engagement, are crucial in addressing obesity and COVID-19, promoting a healthier global population through comprehensive and sustainable solutions. Finally, sustainable global health requires equity necessitating a holistic approach, integrating efforts to address COVID-19 and obesity simultaneously, to ensure equitable distribution of resources and interventions across vulnerable communities (8).

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Not applicable.

Patient consent for publication

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Competing interests

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