



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Letter to the Editor

Reply-letter to the editor: “Impact of the first COVID-19 lockdown on body weight: A combined systematic review and a meta-analysis”



Keywords:

Body weight
BMI
Covid-19
Lockdown

Dear Dr. Nicolaas E.P. Deutz,

We are pleased to submit a response to the Letter to the Editor you have received from Ordonio et al. [1] and wish to thank Dr. Ordonio and team for their interest in our study [2] exploring the impact of the COVID-19 lockdown on body weight and BMI of adolescent and adult population.

The major/first concern Ordonio et al. stated that “... *in fact, the period of exposure to social isolation was responsible for drastic changes in anthropometric variables including the increase in body weight and BMI around the world. Some factors may justify this scenario: the significant decrease in physical activity levels, outdoor exercises, closing of gyms, sports gym, among others.*”; we agree that the period of lockdown was possibly associated with reduced physical activity due to the closure of sport centers and gyms [3], but at the same time one needs to acknowledge that other activities, either outdoors, such as walks with pets, or indoors, e.g., home-based trainings, were not banned, which is a combination of events that does not allow for safe conclusions. Moreover, another systematic review and meta-analysis from our group, found that snacking habit and alcohol consumption were increased during the COVID-19 lockdown [4], which might have been an additional factor leading to body weight and BMI changes.

Regarding their second point of criticism (excluding adolescents 15 years old), the reason that we decided to examine this population was that individuals older than 16 years present a high degree of independence in their food and sport choices in comparison with their younger peers. Moreover, most of the existed studies included subjects older than 16 years rather than 15 years, so we decided to keep 16 years as a cut-off point. In addition, in order to present clear results regarding the impact of COVID-19 lockdown on adolescents and adults, except from the general analysis, a subgroup analysis was also performed in our paper (Figure 4), in our effort to accurately have information for each population group; when adolescents were included in the analysis a significant increase on body

weight was observed (WMD: 1.90, [95%CI, 1.22 to 2.58]) in contrast to no correlation found in the subgroup which included only adults WMD: 0.85 [95%CI, –0.16 to 1.86].

Furthermore, in regard to the third point that was brought up by Ordonio et al., “*that data was obtained via phone interview or online questionnaires*”, we fully agree that this comes with downsides, and that is already addressed as a limitation in our paper [2]. Better obtained data about body weight changes during the lockdown using body composition analyses would have been preferred, but the overall limited data during the period that our survey was conducted, did not allow us to perform such an analysis.

Finally, in regard to the final comment by Ordanio et al., we would like to kindly draw their attention to the statement in our paper that obesity constitutes a risk factor not only for comorbidities, such as type-2 diabetes mellitus, cardiovascular diseases, obstructive sleep-apnea and even cancer, but also for COVID-19 infection.

Thank you for your giving us the opportunity to respond.
Yours sincerely,

Funding

None.

Author's contribution

DB, MC: prepared the manuscript.

Conflict of interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

References

- [1] Ordonio TFM, Santos G, Castoldi A, Souto F. Comment: impact of the first COVID-19 lockdown on body weight: a combined systematic review and a meta-analysis. *Clin Nutr* 2022. *Clinical nutrition* (Edinburgh, Scotland). 2022. Submitted for publication.
- [2] Bakaloudi DR, Barazzoni R, Bischoff SC, Breda J, Wickramasinghe K, Chourdakis M. Impact of the first COVID-19 lockdown on body weight: a combined systematic review and a meta-analysis. *Clin Nutr* 2021. <https://doi.org/10.1016/j.clnu.2021.04.015>. S0261-5614(21)00207-7.
- [3] FutureLearn. What is lockdown and what does it mean for you? [Available from: <https://www.futurelearn.com/info/blog/what-is-lockdown>; 2020.

- [4] Bakaloudi DR, Jeyakumar DT, Jayawardena R, Chourdakis M. The impact of COVID-19 lockdown on snacking habits, fast-food and alcohol consumption: a systematic review of the evidence. *Clin Nutr* 2021. <https://doi.org/10.1016/j.clnu.2021.04.020>. S0261-5614(21)00212-0.

Dimitra Rafailia Bakaloudi, Michail Chourdakis*
Laboratory of Hygiene, Social & Preventive Medicine and Medical Statistics, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, University Campus, 54124, Greece

* Corresponding author. School of Medicine, Faculty of Health Sciences, Aristotle University, University Campus, 54124, Thessaloniki, Greece.
E-mail addresses: dmpakalo@auth.gr (D.R. Bakaloudi), mhourd@gapps.auth.gr (M. Chourdakis).

21 April 2022