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Response to Hinpetch Daungsupawong et al. regarding ''Weight change and lifestyle modifications implemented during the COVID-19 pandemic lockdown: Correspondence''

Respuesta a Hinpetch Daungsupawong et al. respecto a «Cambios de peso y modificaciones de estilo de vida implementados durante el confinamiento por la pandemia COVID-19: Correspondencia»

Dear Editors,

We read the letter by Hinpetch Daungsupawong et al. with great interest. They made a constructive criticism of our study, pointing out its lack of depth necessary for providing a full understanding of underlying causes, stating that the study's cross-sectional design limited causal inference. They also commented that the lack of a longitudinal design made it difficult to determine whether the reported symptoms were directly caused by lifestyle changes related to the pandemic or if they were impacted by previous conditions that worsened during the lockdown. In addition, they stated that depending on self-reported symptoms introduces possible biases, given that participants often over-report or under-report their symptoms, according to memory or perception, compromising the validity of the results. We absolutely agree with that point, describing it as an important study limitation in our discussion section. There is always a risk of bias when obtaining information through a survey, especially information bias, derived from errors in survey design or questionnaire application on the part of the interviewer or interviewee, which is why we stated that our findings had to be validated through additional studies.[1]

Conducting a longitudinal study is extremely complicated in the context of our study aim, and be that as it may, other cross-sectional studies have reported findings similar to ours. For example, the study conducted by Qiao et al., who evaluated the presence of anxiety and depression among university students under movement control at their schools during the 2022 Shanghai lockdown due to the COVID-19 pandemic, analyzed the association of gastrointestinal complaints and the habit of omitting breakfast with symptoms of anxiety and depression. They utilized the general anxiety disorder (GAD-7) questionnaire and the patient health questionnaire (PHQ-9) to evaluate the symptoms of anxiety and depression, respectively, finding symptoms as high as 56.8% for anxiety and 62.8% for depression. A longer lockdown duration, higher educational level, omitting breakfast, stomach or abdominal pain, and nausea or dyspepsia were significantly associated with symptoms of anxiety, whereas longer lockdown duration, female sex, omitting breakfast, stomach or abdominal pain, and nausea or dyspepsia were markedly related to symptoms of depression. Likewise, those authors found that regular exercise and a positive attitude toward COVID-19 were negatively correlated with symptoms of anxiety and depression.[2] Even though that study could obviously be susceptible to the biases inherent in cross-sectional analyses, we believe the reported student self-assessment and perception is undeniably a vitally important indicator to be taken into account and requires due attention, given that said study showed how potentially simple interventions could have provided psychologic and medical support for improving quality of life and reducing symptoms in those patients.

Hinpetch Daungsupawong et al. also commented that the demographic homogeneity of the sample we studied calls into question the generalizability of the findings, with which we fully agree. Mexico is a vast, extremely heterogeneous territory; the diet and lifestyle of the Mexican population is special and particular, with local ingredients that are not always available in all regions of the world. The traditional Mexican dietary pattern was previously identified in a historic review of the food composition of traditional Mexican diets in the United States and Mexico. It is composed of a mixture of native Mesoamerican (pre-Hispanic) and Hispanic foods, characterized by large quantities of fruits, vegetables, complex carbohydrates, and dishes based on corn, prepared with chili peppers, garlic, onions, spices, beans, squash, citrus fruits, and rice.[3] Therefore, we agree that the findings of our study can only be extrapolated to the Mexican population in the urban center of the country.

Hinpetch Daungsupawong et al. indicated that even though the mean age of the participants was reported, a more specific breakdown by age group, socioeconomic level, and pre-existing health problems would have provided a more complete set of data and facilitated the personalization of the intervention. It should be pointed out that the aim of our study was never to carry out any type of intervention, but rather only to determine the prevalence of gastrointestinal symptoms during the period of lockdown due to the COVID-19 pandemic and evaluate if there was a relation between said gastrointestinal symptoms and the stress phenomena and lifestyle changes occurring during the lockdown.[1]

Hinpetch Daungsupawong et al. stated that our study found significant increases in several gastrointestinal symptoms but did not provide a solid theoretic framework for explaining how the lifestyle changes during the lockdown, such as dietary changes, physical inactivity, and mental health problems, affected the gastrointestinal results. A deeper examination of those related factors could improve understanding and provide useful recommendations for future health strategies. We consider that the main factors of association to which we attributed a greater or lesser frequency of gastrointestinal symptom development were explained throughout the introduction, results, and discussion sections. Nevertheless, it is noteworthy that more than 65% of the persons in our study reported negative changes in their diet, which is why we believe this to be one of the main determining factors related to the development of gastrointestinal symptoms.[1] As established by other authors, we consider that diet is one of the principal modulators of the gut microbiome, directly influencing host homeostasis and biologic processes, as well as having an effect through the action of metabolites derived from the microbial fermentation of nutrients, especially the short-chain fatty acids.[4,5] Changes in body weight have also been related to intestinal dysbiosis.[6–8] Perceived stress[9–11] and changes in physical activity[12] may also have a negative influence.

Hinpetch Daungsupawong et al. suggested that, in terms of originality, our study could have been improved by including objective measurements of gut health, such as biomarkers or imaging techniques. However, we consider their use has nothing to do with our study aim, which was specifically to determine the prevalence of gastrointestinal symptoms during the period of the COVID-19 pandemic lockdown and evaluate whether there was a relation between said gastrointestinal symptoms and both stress phenomena and lifestyle changes that occurred during the lockdown.[1] Likewise, Hinpetch Daungsupawong et al. commented that self-report questionnaires could have been employed, rather than exclusively depending on participant accounts. The use of validated scales or diagnostic criteria for gastrointestinal diseases improves validity and reliability.

In that respect, we would like to point out that, indeed, after reviewing the recent literature, we found a study that utilized the gastrointestinal symptom rating scale (GSRS). That study confirmed the value of incorporating the GSRS for evaluation purposes and to meet the need for individual focuses in dietary treatment.[13]

Lastly, Hinpetch Daungsupawong et al. indicated that future research should include longitudinal studies that can track gut health trends, as post-lockdown lifestyle changes emerge, and that studying the psychologic impact of the lockdown and stress on intestinal symptoms could also offer a complete vision of the interrelated psychologic and physiologic components that influence patient health. They also pointed out that the continuous nature of the pandemic provides an opportunity for future research on post-COVID disorders, particularly their long-term influence on gut health. Furthermore, they stated that researchers should examine preventive measures and educational interventions centered on lifestyle changes that promote gut health, especially to the degree that communities adapt to the ''new normal''. Collaborative studies that include a diverse population and utilize mixed methods can aid in understanding the complexities of this problem, resulting in more effective public health interventions directed at reducing the worsening of intestinal symptoms caused by the epidemic. We are in total agreement in this regard, as reflected in our discussion and conclusion sections, where we state that our findings should be validated through additional studies. COVID-19 and its containment measures, such as lockdowns, have numerous and heterogeneous consequences. The impact on lifestyle modifications resulting from the lockdowns, as well as changes in physical activity, diet, and the use of different types of vitamins and supplements, may have a negative effect on the gastrointestinal tract, favoring the development of different gastrointestinal symptoms. Therefore, public health systems should be aware of the need for a multidisciplinary focus on the healthcare of the affected population, which includes the participation of the gastroenterologist, who should be prepared to respond to the needs of those patients in a timely manner and with the adequate medical healthcare. This is especially relevant, given that new variants of SARS-CoV-2 that are of clinical interest continue to be discovered, and we cannot rule out the possibility that at some point lockdown measures will be necessary again.[1]

CRediT authorship contribution statement

Fátima Higuera de la Tijera and José Antonio Velarde Ruiz Velasco equally contributed to the concept and design of this response to the letter to the editor.

All the authors contributed to the writing of this response, as well as reading and approving its final version.

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Declaration of competing interest

The authors declare that there is no conflict of interest.

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