

Peer-Review comments and author responses

Reviewer 1

General Comment:

This is a very helpful study regarding critically important issue and I highly appreciate the purpose, efforts, and so on. Overall, it is a good manuscript.

However, I have some points that require more description or detailed information, and the authors can consider. In summary, I hope the authors can find these comments useful and constructive.

-Comment: – About CONFLICT-OF-INTEREST PDF DOCUMENTS, I don't know why the manuscript title in the documents is 'Impact of Rising Global Temperatures on Dengue Infection and Serotype Distribution: A Mini Review.' Please correct. Additionally, I cannot find the document of some authors unfortunately.

Response: Thank you for identifying the error in the Conflict-of-Interest document. We have corrected the title to match the manuscript. Additionally, we ensured that all authors have submitted their Conflict-of-Interest forms.

-Comment: The values in the Result section of the Abstract, such as 2.02 and 1.59, I cannot find them in Table 2 and 3. Where do they come from?

Response: Thank you for your observation. Upon review, we identified an inconsistency in the Abstract. The values (2.02 and 1.59) were from an earlier analysis and not updated to match the results.

The correct odds ratios, now consistent with Tables 2 and 3, are:

'Very Low' food security: Adjusted OR 2.18 (95% CI: 1.54–3.07, $p < 0.001$).

'Low' food security: Adjusted OR 1.62 (95% CI: 1.05–2.52, $p = 0.031$).

We have corrected the Abstract to align with the updated analysis and ensured consistency throughout the manuscript. Thank you for bringing this to our attention.

-Comment: – In Outcome Description of METHODS section, does 'at least 100 cigarettes' mean per year or in life?

Response: Thank you for highlighting this point. We clarified in the Methods section that '100 cigarettes' refers to lifetime smoking, which aligns with the standard definition used in epidemiological studies. This adjustment ensures clarity and consistency with how this variable is typically described and analyzed.

-Comment: – In Outcome Description of METHODS section, I cannot find gender as covariate though it is written in Methods of Abstract. Please confirm:

Response: Thank you for bringing this to our attention. Gender was included as a covariate in our analysis, as outlined in the Methods section of the Abstract. It was retained in the final model due to its potential relevance as a confounder and its association with the outcome of interest.

We have reviewed the Outcome Description section of the Methods and clarified the inclusion of

gender as a covariate to ensure consistency throughout the manuscript. We appreciate your careful review and feedback.

-Comment: – Authors wrote the purpose of conducting complete case analysis was to reduce potential bias in Statistical Analysis, METHODS section. However, completing itself can introduce some systematic biases. So, I suggest to delete ‘To reduce potential bias’.

Response: Thank you for this suggestion. We revised the text in the Methods section to clarify the rationale for conducting a complete case analysis. The updated text now states: 'A complete case analysis was conducted, including only participants who answered all questions related to food security and respiratory health, to ensure consistency and comparability of the data across variables.' This ensures neutrality in the explanation and avoids implying bias reduction.

-Comment: – Please confirm the Tables and Figures. For example, the value 2,34, total column of Table 1, would be inappropriate. As well as the p-values in Table 2, and so on.

Response: Thank you for your observation. We conducted a thorough review of all tables and figures, ensuring that the statistical analyses, values, and formatting align consistently with the manuscript text and results.

Tables 2 and 3 now clearly differentiate between unadjusted and adjusted odds ratios, as well as their corresponding confidence intervals and p-values.

-Comment: – About the limitation of the study, it would be great to be addressed that the NHANES data include limited to specific demographic areas.

Response: We have expanded the limitations section to acknowledge that the NHANES dataset is geographically and demographically limited, which may affect the generalizability of the findings to the broader U.S. population or other countries.

-Comment: – Additionally, the dataset wouldn't include information on potential confounders including diseases, medicines, and the family history of the target diseases.

Response: We have included a discussion of the absence of potential confounders, such as diseases, medications, and family history of respiratory conditions, as a limitation in our study.

-Comment: – Please confirm the REFERENCES. For example, the year of Food Insecurity is Associated With COPD Morbidity and Perceived Stress would be 2024.

Response : Thank you for your feedback. We addressed the reviewers' concerns by expanding the Limitations section in the Discussion to:

Highlight NHANES dataset's limited generalizability due to its demographic focus.

Discuss the absence of confounders, including diseases, medications, and family history, and how this could influence respiratory outcomes.

Clarify the potential reporting bias caused by self-reported respiratory diagnoses and emphasize the need for objective measures such as spirometry.

Address the retrospective nature of the dataset and its implications for contemporary relevance while justifying the validity of the insights drawn from this data.

Reviewer 2:

Dear authors,

I would like to congratulate you on an excellent study; a very interesting research question and I think it adds a lot to the scientific community. I think your article is almost ready; however, it needs polishing before being published. I am sending my comments; I hope they are helpful.

1. Abstract:

-Comment: -You should start with something like “a cross-sectional study was conducted using NHANES 2005-2006...”. -Statistical analysis is good but it should be included in a second sentence.

Response: Thank you for your suggestion. We rearranged the paragraph.

-Comment: -Remember to include number of participants (methods vs results).

Response: Thank you for your observation. We added the number of adults included in the analysis.

-Comment: -First part of conclusion should be a direct answer to your research question.

Response: Thank you for the comment. We rearranged the paragraph to answer the our research question.

2. Introduction:

-Comment: Paragraph 1: -Main topic (first sentence) is not well established, especially if you try to link it with the conclusion (last sentence) of the paragraph.

-I think the link between paragraphs would be neater.

Response: Thank you for the suggestion, we revised the opening sentence to introduce the topic, as well as the conclusion to explicitly the importance of addressing food insecurity in the context of respiratory health and public health strategy development. This directly links back to the main topic introduced in the first sentence.

-Comment: Paragraph 2: -I strongly recommend that you avoid citing specific authors in the

introduction. It is better to be more comprehensive and wait for the discussion to be more specific and compare similar studies or use external data. Obviously if one uses information from an author, it is cited but not mentioned directly (my opinion).

Response: We attempted to summarize the findings to provide a more comprehensive overview of the topic

-Comment: >Paragraph 3:

-I don't see the need to use quotes when you talk about your objective (your research question); it should be an objective of its own based on a gap found in the literature. Maybe I did not understand the use of that quote.

Response: Thank you for your comment. We rephrased the study objective as a direct statement.

3. Methods:

-Comment: -Interesting point: choosing patients aged 20 or older; is there any special reason for choosing patients aged 18 or 21 or older? I am curious; perhaps a little explanation is in order.

Response: The database provided information on emphysema and bronchitis only for patients older than 20 years of age, we addressed this question in the text.

4. Results:

-Comment: -Interpretation of data such as "potential cumulative effect of food insecurity over time" or "emphasizes the compounded impact of socioeconomic and lifestyle factors" should be done in the discussion. Results should be objective without potential interpretation or results.

Response: Added the information to the discussion section and kept the results more clear and objective

-Comment: The "Summary of findings" section should not be in the results, but should be explained in the discussion (as it currently is in the first part of the discussion).

Response: Thank you for the feedback, we rearranged the text and the information. Tables:

-I could not understand the p-value in your tables. For example, in Table 4, you explain that the p-value for race/ethnicity is 0.004 (legend), but in the table it appears as 4. It is better to homogenize that.

-Comment: -You should not interpret in the results including tables: "...highlighting its importance as a confounder".

Response: Thank you for your comment, we worked with the statistic team to make the table clear for the reader.

5. Discussion:

-Comment: -It is not needed to emphasize that "although our study is observational" as it is already done in the subsection of limitations.

Response: Thanks for the suggestion. We excluded this from the final paragraph.

Reviewer 3:

1. Title and Abstract

-Comment: Consider a more direct title that reflects the study's focus and main findings, such as: "Association Between Food Insecurity and Obstructive Respiratory Diseases Among U.S. Adults: A Cross-Sectional Analysis."

Response: Thank for the suggestion, we agreed with the new title.

-Comment: The abstract is concise, but it could benefit from including specific mentions of the statistical methods used and the key conclusions regarding the impact of food insecurity on different groups analyzed (e.g., age groups or smoking status). For example, specify the use of logistic regression and highlight how food insecurity's effects vary across demographic subgroups.

Response: Thank you for your input, we included the statistical analysis used and improved the abstract section

2. Introduction

Context and Relevance: The introduction covers the topic well but could be enhanced by briefly discussing recent trends in food insecurity and how these trends might contribute to public health disparities. Additionally, providing a more detailed rationale for focusing on respiratory outcomes specifically would strengthen the study's context.

Response: Thank you for the feedback, due to your comment and other reviewers, we have reassessed the approach in our introduction section

-Comment: Research Gap and Objective: While the objective is clear, consider explicitly saying the research gap in your study. Emphasize the need for research that controls for multiple confounders in this specific context.

Response: We added a sentence to make the research gap clear

3. Methods

-Comment: Study Design: The cross-sectional design is adequately explained, but specifying the strengths and limitations of this approach in studying associations (rather than causation) would add clarity.

Response: Acknowledged the strengths and limitations of the cross-sectional approach for studying associations.

-Comment: Exposure and Outcome Measures: The definitions and categorizations of food security are well-described. However, consider elaborating on the validity and limitations of using self-reported respiratory diagnoses. If possible, include a brief mention of other studies that used similar NHANES data for validation.

Response: We revised the structure of the paragraph, and added the discussion of potential biases in self-reported measures.

-Comment: Statistical Analysis: The statistical analysis is robust, though the text could benefit from detailing the rationale behind using a forward stepwise selection method. This addition would help readers understand why this approach was chosen over others. Also, consider clarifying how missing data were handled, especially given the importance of controlling for confounders.

Response: The text indeed needed revision, thank you for your feedback. We added information in order to address missing data handling and explained the rationale for choosing the forward stepwise selection method.

4. Results

-Comment: Participant Characteristics: The baseline characteristics table is comprehensive. Ensure that all relevant demographic variables are clearly presented. Additionally, discussing any significant demographic differences between food security levels (beyond respiratory conditions) could enrich the reader's understanding of the sample.

Response: Thank you for the thoughtful comment. We have carefully reviewed the table and the text to highlight important information on that.

-Comment: Logistic Regression Analysis: While the adjusted and unadjusted ORs are presented effectively, consider including a short interpretation of the clinical relevance of these ORs. For instance, how might a doubling of risk due to very low food security impact public health planning?

Response: Thank you for the comment. We have added a brief clinical interpretation of the findings to the paragraph.

-Comment: Sensitivity Analysis: The age-stratified analysis is insightful. To enhance this section, include a rationale for the specific age cutoffs and discuss any age-related trends in food insecurity and respiratory health. Additionally, a brief mention of the limitations of this sensitivity analysis would provide transparency.

Response: Thank you for your comment, we did go back to the statistics section and restructured the analysis.

6. Discussion

-Comment: Interpretation of Results: The discussion effectively highlights the study's findings, but it would benefit from comparing these results more directly with similar studies. Additionally, mention potential biological or environmental mechanisms linking food insecurity to respiratory conditions (e.g., stress, exposure to allergens).

Response: Thank you for highlighting this point. We search for this literature and include a paragraph to potential mechanisms associated with both conditions.

7. Limitations:

-Comment: The limitations are well-stated, particularly regarding self-reported data and cross-sectional design. However, consider discussing how these limitations might affect

specific subgroups (e.g., individuals with lower socioeconomic status may underreport respiratory issues due to lack of access to healthcare).

Response: Thanks for your suggestion. We will consider adding this in our discussion section. It will surely enhance the transparency and reliability of the study.