

## Peer-Review comments and authors responses

### Response to reviewers

Point by point authors' response to editor's review based on the below attached review form:

*We thank the reviewers for the reviews and these assessments of the submitted manuscript. We accept all the suggestions made by the reviewers' revision which we believe will improve the overall content and structure of the manuscript. This letter summarizes the authors' response to the constructive comments and suggestions made by the editor and reviewers.*

*Kindly note that we highlighted the edits in the revised manuscript in yellow color which is labeled "Revised Manuscript with Track Changes". The changes will be submitted in the revised manuscript as "tracked" for your review.*

### Reviewer 1:

Recommendation: Resubmit for Review

*In this study, the authors developed a Mini Review to evaluate the impact of Rising Global Temperatures on Dengue Infection and Serotype Distribution.*

*Studies investigating the relationship between climatic events and the increase in dengue, as well as the variation in its serotypes, are essential for understanding the dynamics of disease transmission in different regions. Understanding these relationships is critical for predicting outbreaks, developing more effective control strategies, and implementing public health policies that mitigate the disease's impact on vulnerable populations.*

*I would like to ask for some clarifications on the following topics (I have described below and highlighted in the Word document):*

1. **Introduction:** *The introduction is well-written, presenting the necessary elements to outline the topic. The gap is well stated, and the authors identify the public health impact that the mini-review results can elucidate.*

Authors response: Thank you for your comment. We have added a sentence that emphasizes the specific gap in knowledge regarding serotype differences and how understanding these dynamics is critical for designing targeted public health strategies in the last paragraph of the introduction.

### 2. Methods

- a) Search strategy: "[...] As the study progressed, we narrowed our focus to dengue due to its significant public health impact, the availability of extensive data, and identified a gap in knowledge on dengue serotypes."

*It was not clear if you used both strategies or if you used only strategy #2. I'm asking because usually, you test the strategies before moving on with the process. As you stated "As the study progressed, we narrowed our focus..." it was not clear if you changed the strategy or if used both.*

Author response: We have clarified that both strategies were tested, and after refining the focus, we proceeded with the targeted search strategy. The revised text reflects this approach. "Initially, both strategies were tested. After refining the focus of the review, we proceeded with a more targeted search strategy concentrating on dengue and its serotypes due to the significant public health impact."

- b) *Inclusion and Exclusion Criteria versus search strategy: In the text is stated that you included published studies within the last 15 years. The search strategy #1 is using as filter "in the last 10 years"*

Author response: We have corrected the inclusion criteria to reflect those studies from the last 15 years (the earlier article was from 2009) were included, aligning with our search strategy. The change we made is in the Inclusion and Exclusion criteria

- c) *Reading the flowchart, you excluded 1 study that is not in English. You should add as an exclusion criterion the Language.*

Authors' response: We have added " Studies not published in English were excluded from the review." in the inclusion/exclusion criteria to reflect these criteria.

### **3. Results**

- a) *The figure 2 is not cited in the text*

Authors' response: We have now cited Figure 2 in the results section to ensure clear reference to the figure.

- b) *The paragraph "The studies included in the review support previous findings that a strong correlation between variations in ambient temperatures and increased dengue incidence is evident" looks more like a discussion than results.*

Authors' response: We have moved the interpretive content to the discussion section and kept the results section neutral and factual. The revised text better separates results from discussion. "The studies included in the review support previous findings, showing a strong correlation between rising ambient temperatures and increased dengue incidence."

- c) *Table 2: some abbreviations are missing – N/A; CI; DENV (all need to be in the tables notes)*

Authors' response: We have added the necessary explanations for abbreviations in Table 2, including "N/A," "CI," and "DENV." This ensures that all terms are clearly defined for readers.

*d) Great catch about Roseghini's statement: "The temperature as a significant predictor (Pearson = 0.7;  $p > 0.99$ )". The correlation is positive, but it is not significant at all!*

Authors' response: We have clarified that although the correlation was positive, it was not statistically significant. The revised text now accurately reflects the findings.

#### **4. Discussion**

*You have done a wonderful job with the results section with the included studies. The second paragraph of your discussion looks like a "summary" of your results, not a discussion per se. I suggest amplifying the comparison with the previous systematic review presented or including more discussion considering other studies.*

Authors response: It was a lot of work, I did find repeated data, I tried to leave results and discussion located in each of its sections, sometimes I didn't know where to put certain content, but I placed it in the way I considered most organized in the end.

#### **5. References**

*What is the format? Usually, the references are not presented with bullet points (should be listed in alphabetical order or numbers, depending on the reference format.*

Authors response: We have already removed the bullet points, now the references are numbered, and I also placed the number of the corresponding reference in parentheses within the text of the article. It was necessary to remove two references that corresponded to modeling studies.

#### **Reviewer 2:**

Recommendation: Revisions Required

*Thank you for such great job. humbly my suggestions and feedback uploaded in same word file and it is mainly as following:*

##### **1. Method:**

*a) Handling missing Data*

Authors' response: Since we conducted a qualitative systematic review, studies that did not have complete data were excluded. Only studies that met the inclusion criteria were included. So, we

do not have missing data. However, since these are observational studies, inclusion bias is implicit in the nature of the studies. which was assessed using the Ottawa scale.

b) *Understanding the difference between primary objective vs secondary objectives as well as primary vs secondary outcomes.*

Authors' response: Our primary objective is to determine if there is a correlation between the increase in global temperature due to climate change and the incidence of dengue with a predominant serotype. No secondary objectives were set.

2. **Results:** *The flow of the results and discussion should match and with your objectives.*

Authors response: It has already been corrected by re-editing the text under discussion and results.

3. **Discussion:** *The lack of evidence-based elaboration and justification especially in introduction and discussion*

Authors response: The bibliographical references of the evidence for each comment have already been placed in the introduction and in the discussion.

### **Reviewer 3:**

Recommendation: Revisions Required

*Dear Authors and editor,*

*This paper is important because dengue is an infectious disease prevalent mainly in countries with a tropical and subtropical climate and low income with high mortality, which is associated with global climate change and therefore must be taken into account in public health system in these places.*

Authors response: Thank you very much for your comment, I added a line in the conclusion addressing this topic.

### **Reviewer 4:**

Recommendation: Revisions Required

*Dear Authors,*

*I read with great interest your systematic review about the association between the rising of global temperature and the different dengue serotypes.*

*Please, find below my suggestions and comments:*

1. **Title:** *I would suggest to add the word "systematic"; by writing only "mini review" it is not clear which kind of review you performed.*

Authors response: The original title "Impact of Rising Global Temperatures on Dengue Infection and Serotype Distribution: A Mini Review" was suggested according to the PPCR 2024 course guidelines; however I think it can be changed without problems to a more conventional name such as "Impact of Rising Global Temperatures on Dengue Infection and Serotype Distribution: A qualitative systematic Review". We would like to hear about your opinion. We didn't manage to register our protocol in PROSPERO, Therefore, we are not sure that we can name our review as a systematic review or not. We are looking to hear from you.

## 2. Abstract

- a) **Methods:** *Medline is a subset of PubMed, so I suggest rephrasing your sentence "For this systematic review we searched MEDLINE and PubMed databases". Usually, the Authors prefer to write about Medline.*
- b) **Findings:** *In this section you should state how many articles you included and the results of the risk of bias. Stating that "there is significant association" without performing a meta-analysis is quite dangerous; instead, I would suggest to report how many studies had statistically significant results.*

Authors response: thank for your comment, we agree with pubmed and medline is the same database. Regard findings also add your suggestion.

3. **Methods:** *Was the systematic review written according to the PRISMA Guidelines? If so, it should be stated.*
  - a) **Search Strategy:** *Medline is a subset of PubMed, so I suggest rephrasing the sentence.*
  - b) **Inclusion and Exclusion criteria:** *I suggest being more specific and clearer. The Authors focus mainly on the type of study design without giving information about - for instance - the population (adults? / Children? / No restriction for age ?), the language... The information provided are not enough to clearly replicate the systematic review: it should be stated and explained if there were or not restrictions for each criterion.*
  - c) **Selection of studies and data extraction:** *it is not specific if and how the reviewers removed the duplicates: did you use automated tools, was it a combination of automated tool and human control, was it performed by the reviewers without automated tools?*

*According to the PRISMA guidelines, you should specify "the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process."*

Authors response: All your appropriate suggestions are already incorporated into the edited manuscript. Thank you.

4. **Results:**

- a) PRISMA Flow diagram: *Looking at the box with the studies excluded with reason it is written "could not access (n = 6)". If the reviewers could not access the full text, this information should be reported inside the box above "studies not retrieved". I suggest controlling the PRISMA flow diagram and modify it according to its proper reporting.*

Author's response: Your suggestion is already incorporated into the edited manuscript. Thank you.

- b) Description of the studies: *I suggest to immediately write the total number of studies that were included.*

Author's response: Your suggestion is already incorporated into the edited manuscript. Thank you.

- c) Table 2: *Why in the fourth column you choose to display either the confidence interval or the p value? I suggest to report both of them.*

Author's response: What happens is that the p-value corresponds to the statistical significance of the correlation, in the studies where this is appropriate (since some reported ratio and others the r value of correlation), and the confidence interval is only reported when there is a ratio as the final result. Thus, it is placed in that table in the same way that the original data is in the study.

- d) *For study N 8 (Chang et al., 2008) we can read "p=0.00\*", however looking at the Legend there is no explanation for the "\*\*"*

Author's response: Your suggestion is corrected, remove the asterisk as they have no meaning

- e) Outcomes: *as this is the Result section, I suggest the reviewers to report the numerical results even when they are not statistically significant.*

Author's response: Your suggestion is already incorporated into the edited manuscript. Thank you.

- f) *Moreover, there are some sentences that should fit more the Discussion section. The Results should be more about data, they should be neutral, without giving space to assumptions. Assumptions and comments should be written inside the Discussion. I suggest to read carefully and re-write the Results and Discussion sections accordingly.*

Author's response: It was a lot of work, I did find repeated data, I tried to leave results and discussion located in each of its sections, sometimes I didn't know where to put certain content, but I placed it in the way I considered most organized in the end.

## 5. Discussion:

*According to the PRISMA checklist, the Authors should write a paragraph regarding the Limitations of their systematic review.*

Authors response: Your suggestion is already incorporated into the edited manuscript. Thank you.

### Reviewer 5

Recommendation: Revisions Required

*The manuscript has the potential to deliver a consistent conclusion overall. However, some points need to be addressed:*

- a) Aim Alignment: *The manuscript states claims “The aim of this mini review is to evaluate the association between ambient temperature and the changes in the incidence of different dengue serotypes”. This must be thoroughly discussed, leading to well-supported conclusions.*

Authors response: We changed to “The aim of this mini review is to evaluate the association between ambient temperature and the incidence of dengue by serotypes”

- b) Misaligned Conclusions: *The conclusion mentions a "significant relationship between temperature increases," which was not outlined as an objective. This needs to be aligned with the stated aim.*

Authors response: We changed to “This review showed 10 of 11 studies with a significant relationship between higher temperature (increases in the context of global warming) and dengue infection, leading to potential outbreaks and greater severity of infections. Information that is useful for policymakers of public health systems in many countries”

Discussion: *The discussion of Aedes aegypti and Aedes albopictus could be better positioned as "future directions" rather than part of the conclusion.*

Authors response: I did change the paragraph to the discussion

*Additionally, the manuscript requires some reorganization, particularly in the methods, results, and discussion sections. Currently, results are sometimes presented within the discussion, and discussions appear in the results section. To assist with this restructuring, we suggest this article*

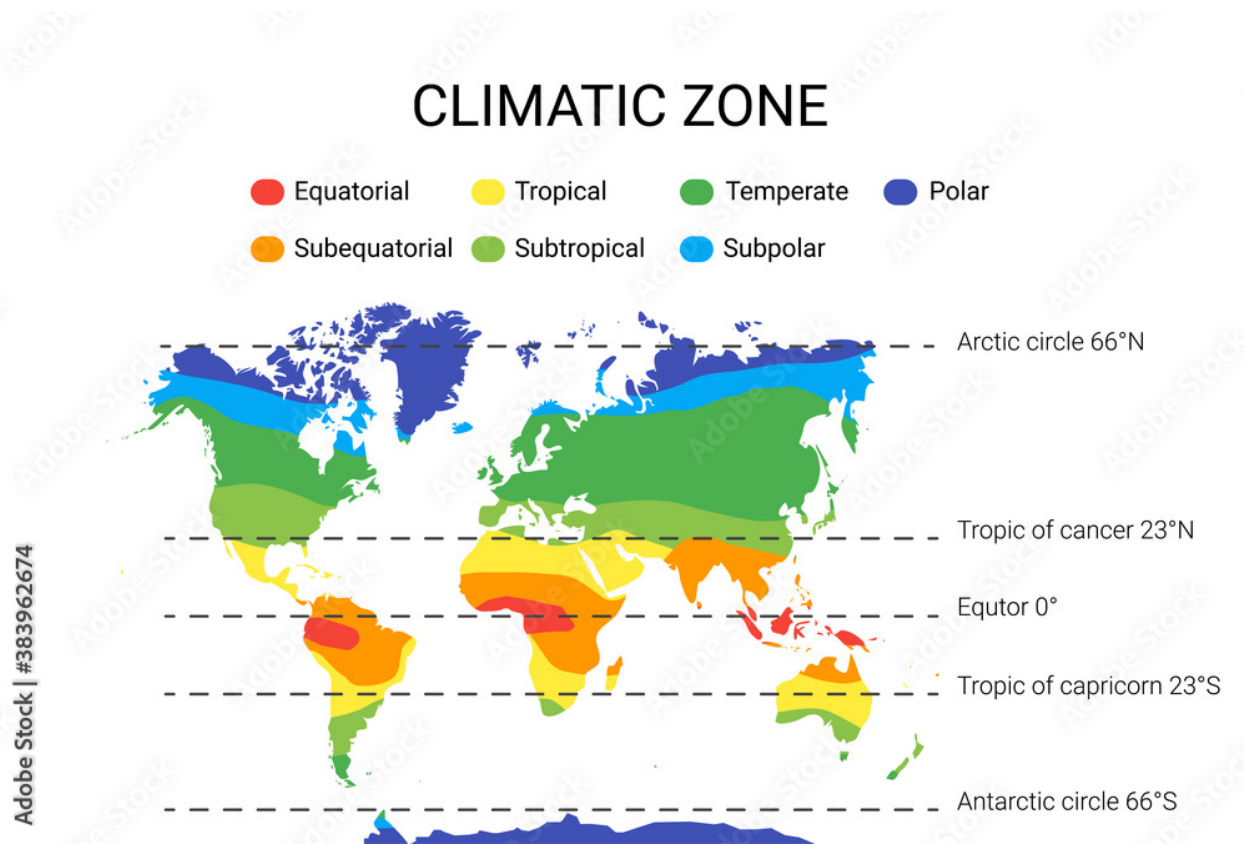
Authors response: It was a lot of work, I did find repeated data, I tried to leave results and discussion located in each of its sections, sometimes I didn't know where to put certain content, but I placed it in the way I considered most organized in the end.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8895806/> and its references.

In general, we thank the editor and reviewers for the overall comments as we feel these amendments have majorly improved the academic value and content of our work.

Thank you.

Corresponding author



Picture from climatic zones (climate zones map. Vector with equatorial, tropical, polar, temperate and sub- zones vector de Stock | Adobe Stock)