

**Re: Article titled “COVID-19 and thyroid disease: an infodemiological pilot study”**

## **Responses to Reviewers’/Editors’ comments**

### **Reviewer #1**

**[1]. *There is excessive use of parentheses i.e. ( ), throughout the manuscript. These are not encouraged in academic writing, and rather clauses should be utilized for the same purpose.***

In the revised version of the manuscript we avoided the use of parentheses.

**[2]. *Abstract has unexplained abbreviations, which need rectification.***

In the revised version of the manuscript abbreviations are used sparingly, and when doing so this was done only after the abbreviation having been explained.

**[3]. *Methods section should be expanded and divided into subheadings (e.g. data collection, inclusion & exclusion criteria, statistical analysis). Please refer to prior publications utilizing GTs.***

In the revised version of the manuscript we have split the Methods section in two parts.

**[4]. *Figure captions have unexpanded abbreviations, which need rectification. Each figure caption should be standalone.***

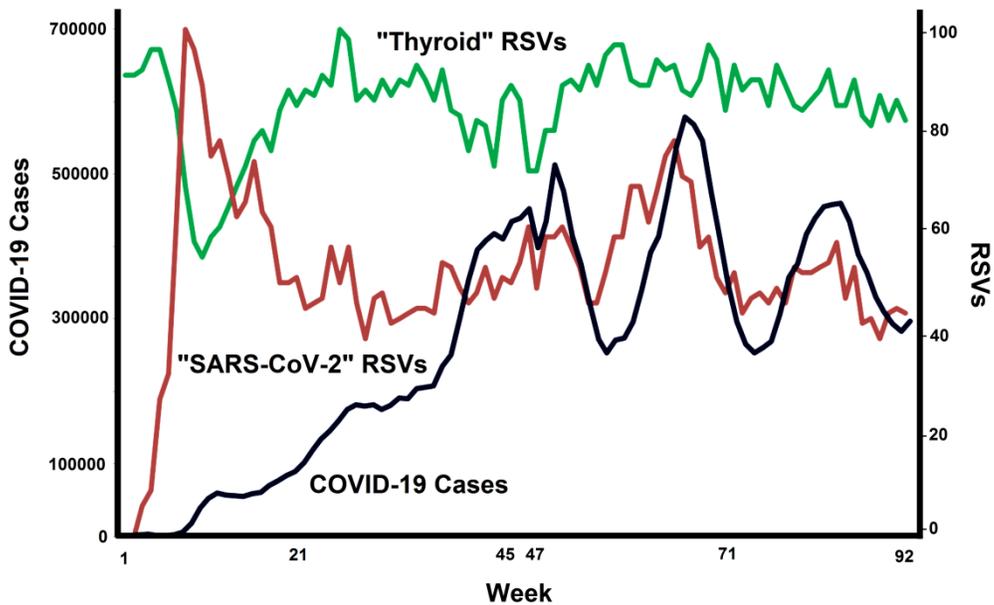
In the revised version there is a single figure and the abbreviations in it are used sparingly and after having been explained.

[5]. *It is possible to have figures 2 and 4 merged into a large graph with dual y-axes. This would be more useful to the reader in drawing the correlation.*

In the revised version there is a single combined figure. The graph for fatigue has been eliminated – please see below.

**“Figure 1.**

Time series plot of selected study data: worldwide COVID-19 weekly cases and Google Trends relative search volumes (RSVs) for “SARS-CoV-2” and “Thyroid” during the study period. Note the differences in magnitude, particularly during the second half of the study period.



”

[6]. *Why has fatigue been taken as a search term? 'Fatigue' is a highly non-specific symptom, occurring in a wide variety of diseases and conditions, not just thyroid disease, but also in long COVID (a major confounding factor). Kindly justify within manuscript or rectify.*

Following the Reviewer's suggestion, the data, the analysis and the graph for "fatigue" have been eliminated in the revised version of the manuscript.

## **Reviewer #2**

***[1].The frequency of vocabulary is related to the public's attention to the vocabulary, which cannot directly reflect the epidemiological characteristics of the diseases involved in the vocabulary.***

We thank the Reviewer for the comment. We have embedded it in the Discussion as follows:

"Google Trends provides a powerful measure of public interest in a topic, being a proxy of internet searches for it. The frequency of internet searches for disease terms may not reflect directly the epidemiological characteristics of a given disease, which is related and/or described by such search terms. Media coverage may skew subsequent internet searches. Nevertheless, the frequency of internet queries for various diseases' symptoms are correlated to a degree with physician visits for these diseases".

***[2].Why only choose the words listed in the methodology.***

The search terms were chosen because of their ubiquity and uniformity in lay and medical terms. This has been added in the revised text.

***[3].What's the point of doing this research? It needs to be clarified in the introduction.***

We have added the following in the Introduction in the revised version of the manuscript: "Since the use of Google Trends to study a wide range of medical topics is becoming more widespread

and the available research on Covid-19-related thyroid disease is conflicting, with this work we aimed to look at the issue of Covid-19-related thyroid disease from a different angle, namely that of digital epidemiology, since the latter may be a useful adjunct to classical epidemiology.”

### **Editorial Comments**

*The manuscript reflects the actual disease epidemiology through Google trend (GT) search, and the covid-19 case itself is associated with (obvious) thyroid disease. The view of the manuscript may be correct, but I think it may be lagging behind, and the relevant reports can be searched. The abbreviation appearing for the first time must have a full name, which is not easy for readers to understand.*

In the revised version of the manuscript we cited additional newer references. Abbreviations are now used sparingly throughout the text; when used they are properly explained at their initial appearance.