**Editor’s comments:** A minor revision is suggested

**In-house Editor comments:**

Silvia Butera (Associate Editor) comment: Please make sure the software used to create the map in Figure 1 is also properly cited in Figure 1 caption

**Response#:** Thank you again for raising this comment. We had mentioned the source and server in the method section. Now, we have now mentioned it in the figure 1 caption.

*It is freely available online server. They have not addressed about the citation in their website (worldmapmaker.com).*

**Reviewer Comments:**

**Reviewer 3**

This manuscript titled “Cold environment accompanied by high-cholesterol and obesity augments SARS-CoV-2infectivity" is well revised by the authors. They have addressed all the questions and included the revisions in the manuscript.

**Response#:** Thank you for accepting our revised manuscript.

**Reviewer 1**

The changes made by authors are impressive and points out novelty of manuscript. Overall corrections are good however, i still suggest some minor revisions before acceptance of manuscript:

1. Abstract and title still requires modification. Especially, abstract first three lines are too generic and must be title specific.

**Response#1:** Thanks to reviewer for this suggestion. We have modified the abstract again especially focusing the title specific [See in blue font]

2. In introduction: "Our findings were consistent with other studies4-6, detecting significantly lower COVID-19 transmissibility in warmer temperatures" and more similar phrases. These kind of sentences must not be part of introduction, rather must belong to discussion and results.

**Response#2:** Thanks to reviewer again for critical evaluating the manuscript. We have moved it to result section under subheading “Univariate analysis to study the association between COVID-19 cases and metabolic parameters” [See in blue font, Page#3 and 4]

3. Please add the effect of COVID and creation of emergency due to unavailability of instant medical and human resources following the reference similar to: <https://doi.org/10.1007/s41204-021-00102-7>

**Response#3:** Thanks again to reviewer for this point. We have included such papers in the introduction section [see in blue font, page #2]

4. As conclusive remark: This study suggests that the individuals with metabolic disorders such as high cholesterol and obesity may need to take additional care to avoid this virus infectivity especially in winter months or while living in colder environments. However, further study is required to know whether the infectivity rate of mutant variants of SARS-CoV-2 depends on these factors. : A more appropriate conclusion which will be help in formation of policies is required. The conclusive remark must highlight the main outcome and prospect of current study.

**Response#4:** Thanks again for raising this critical comment. We have reframed the conclusive remark in the discussion section [see in blue font, page #11] as:

“In brief as a conclusive remark, such multiphase growth curve models may be used to depict the contribution of various covariates with COVID-19 cases. Moreover, the individuals with metabolic disorders such as high cholesterol and obesity may have additional risk for this virus infectivity especially in winter months or while living in colder environments. Thus, this study further recommends that a nationwide policy is to be framed in order to combat COVID-19 pandemic and its clinical outcomes for taking care of vulnerable individuals with such metabolic diseases of a cold country”  
  
Reviewer 2  
The overall revised manuscript looks good and can be accepted for publication.

**Response#:** Thank you so much for accepting the manuscript.