# Peer Review Report

# Review Report on Pandemic fatigue and anxiety sensitivity as associated factors with posttraumatic stress symptoms among university students in South Korea during the prolonged COVID-19 pandemic

## EVALUATION

### Q 1    Please summarize the main findings of the study.

Thank you for inviting me to review this interesting article that studies depression, post-traumatic stress, anxiety, among other mental health disorders, in university-aged South Korean students after the 4th wave of the COVID-19 pandemic.

### Q 2    Please highlight the limitations and strengths.

The study has strengths, such as, it is likely the first study in South Korea, it has a great sample size, and it combines different outcome variables while accounting for several demographic characteristics at baseline. Limitations are detailed in Q3.

### Q 3    Please provide your detailed review report to the authors. The editors prefer to receive your review structured in major and minor comments. Please consider in your review the methods (statistical methods valid and correctly applied (e.g. sample size, choice of test), is the study replicable based on the method description?), results, data interpretation and references. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

Major comments

Improve abstract by using the exact coefficients, 95% CI, and p-values associated with the main risk factors linked to your outcome variable.

Remove the 'which is more infectious even in unvaccinated and vaccinated individuals' part of the abstract as it doesn't really apply to your research question. Probably, provide a more specific background for the age group you are looking for.

What are the implications of these results regarding new variants (e.g., Omicron) and these might differ from existing ones?

Could you please provide more context for the number of cases hit in South Korea by the study date? Also, providing a time with the number of cases per day since the onset in South Korea would be highly appreciated to have a broader perspective of how the pandemic has struck the country (otherwise cite a paper, accordingly).

Why are people not getting vaccinated? Are there any cultural characteristics within the South Korean population affecting these rates and the feeling of fear towards the pandemic? How is this linked to higher anxiety, stress, etc?

Would you mind attaching the questionnaire as supplementary material if you have the questionnaire applied?

How was the sample size determined/calculated? Is it representative of the university student's population? Or how does this vary from the real population?

After applying the questionnaire, I would like to see a description of the universities reached and whether they vary in composition. Are most of them private or public institutions? What is the overall response rate and by the institution? It would be nice to map the institutions reached out. Also, the hierarchical model was hierarchised by the university? Would you mind employing descriptive stats by the university to check whether there is any considerable difference between them?

I wonder whether the tests used are adequately certified or validated in South Korea, and therefore whether they are reliable. More details should be provided in the phrase 'two Korean-English bilingual translators'. Refer to their institutions or names to make the statement more valid. Would you mind finding previous studies within the South Korean context using the same test/scales?

Most of your sample comprises women (nearly 75%), which is not consistent with the percentage of male/women in the country (almost 50% for each). Could you please further employ secondary analyses by sex? Consider using stratification techniques for the modelling. Likely, there are some sex disparities when it comes to COVID-19 and mental health as shown by previous literature:
(https://www.sciencedirect.com/science/article/pii/S2352827321001531 ;
https://www.frontiersin.org/articles/10.3389/fpsyt.2021.712492/full)

For the modelling, you stated, "Normality of the data was checked using histograms and normal probability plots, skewness, or kurtosis measures.", could you please provide this information in the supplementary material? Also, did you test multicollinearity? If you used STATA, pls consider using the VIF test.

Try to provide more details on the interpretation of the coefficients of your model in the results section.. For instance, 1.2 means an increase of 1.2 units on the X outcome. Also, you calculated the hierarchical model but didn't present the main 'take-away' messages in the results section apart from the variance explained. Would you mind?

Please consider other limitations of the study, such as, it was online and self-reported; therefore, data might be biased. What were the response rate and missing data of the study?
Are there any other important variables, introduced in other articles, affecting mental health that you did not capture in this study?

Could you please introduce a new paragraph in the discussion to say how different public policies (and which) could be presented at the local (university) or national level to reduce the damaging mental health effects observed during the pandemic in the targeted population?

Please consider other existing articles to be included as part of the literature and how they connect with your study:
https://www.frontiersin.org/articles/10.3389/fpsyg.2021.669119/full
https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-11295-6
https://www.nature.com/articles/s41598-021-97697-3
https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC7473764/
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0245327
https://bmjopen.bmj.com/content/11/8/e053231


Minor comments

Pandemic fatigue test (line 104)... "developed by [25]" : Please state the name of the person/paper plus the corresponding citation

Cite the Cronbach's alpha coefficient accordingly (at least one for further clarification in case the reader doesn't know what that is)

Line 126: Please spell out OTC once firstly mentioned.

Line 127: replace "drinking of alcohol" by alcohol consumption

Line 130: By COVID-19 vaccination, do you refer to COVID-19 vaccination status? If so, please change it accordingly.

For consistency matters pls refer to COVID-19 stressors or COVID-related characteristics (see lines 127 and 133).

Define levels of worry towards COVID-19 and vaccination, is that a 5points scale indicating highly worried to low concern? Etc.

Did you use robust standard errors? Did you test them? Did you use clustering for the error term by the school? Please state this accordingly in methods. Please consider otherwise.

For people who had COVID-19 tests, was it a lateral flow (rapid test) or a PCR? If you don't have enough information, please consider the limitations of those responses accounting very rapidly for tests specificity and sensitivity.

You mentioned you used a "hierarchical regression", Was it a hierarchical LINEAR regression? If so, please state it accordingly to provide the exact details.

Consider replacing "sars-CoV-2" with SARS-CoV-2 throughout the text.

Please define some of the abbreviations used in the tables (e.g., yr), underneath them in notes.

## PLEASE COMMENT

### Q 4    Is the title appropriate, concise, attractive?

Yes

### Q 5    Are the keywords appropriate?

Yes

### Q 6    Is the English language of sufficient quality?

Yes, even though I recommend some minor corrections, please double check

### Q 7    Is the quality of the figures and tables satisfactory?

Yes.

### Q 8    Does the reference list cover the relevant literature adequately and in an unbiased manner?)

Yes, even though further improvement is needed

## QUALITY ASSESSMENT

### Q 9    Originality

| Q 10 | Rigor | ▮▮▮▯▯ |
| Q 11 | Significance to the field | ▮▮▮▯▯ |
| Q 12 | Interest to a general audience | ▮▮▮▯▯ |
| Q 13 | Quality of the writing | ▮▮▮▮▯ |
| Q 14 | Overall scientific quality of the study | ▮▮▮▮▯ |

## REVISION LEVEL

**Q 15** | **Please make a recommendation based on your comments:**

Major revisions.