Peer Review Report

Review Report on Association between pandemic fatigue and disease knowledge, attitudes, concerns and vaccination intention at two key moments of the COVID-19 pandemic

Original Article, Int J Public Health

EVALUATION

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

This study revealed that pandemic fatigue significantly impacts knowledge, concerns, agreement with health policies, information-seeking behavior, and vaccination intent during the COVID-19 pandemic. Changes in these behaviors were also influenced by the evolving context and epidemiological situation. The findings underline the importance of considering pandemic fatigue when designing public health interventions and managing future outbreaks.

Q 2 ▸ Please highlight the limitations and strengths.

See below

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.

It's a pleasure reviewing this paper, as it offers a potential contribution to the existing literature. However, I feel several important elements must be strengthened and clarified at this stage before it can be considered for publication.

Introduction :
1) While the text covers a broad range of aspects related to COVID-19, preventive measures, and pandemic fatigue, it would benefit from a more logical and structured progression of ideas. Furthermore, the study's main objective is only made clear at the end of the intro. I recommend revising the introductory section to clearly and earlier state the study's purpose.
2) Within the context of your study on pandemic fatigue, I propose the integration of a conceptual framework. This framework could elucidate the following:
a) The factors contributing to pandemic fatigue (e.g., number of pandemic waves, length of quarantine periods, personal characteristics like age and employment status).
b) How pandemic fatigue may influence specific outcomes such as knowledge, attitudes, perceptions, and preventive practices towards COVID-19.
c) The possible consequences of these changes on public health outcomes.
d) Including such a model in your introduction can help readers understand the theoretical basis for your research, the relationships you're exploring, and the overall direction of your study. I'm especially thinking about this sentence "Pandemic-related fatigue and symptoms, such as distress, anxiety, and other negative feelings, might have influenced changes in the population's knowledge, attitudes, perceptions, and preventives practices. Various concepts appear intertwined, making it difficult for readers to distinguish the variables of interest and the covariables targeted in the project. A conceptual model would alleviate this confusion.

3) The statement that "there is a lack of scientific evidence to support that pandemic fatigue has been driving the observed decline in adherence to health-protective behaviour" seems to contradict the later discussion of the pandemic fatigue scale and associated factors. This might create confusion for the reader. Consider providing a further explanation or contextualizing these points better.

Methods:
1. It would be helpful to provide additional context on why rounds 3 and 9 were chosen for this study. Does this timeframe coincide with significant events or changes in Spain's COVID-19 response?
2. You have provided detailed information on the scales and indexes used in the study, which is good for replicability. However, it might be beneficial to provide references for these scales (if they exist) to give the reader an understanding of their validity and reliability beyond Cronbach's alpha.
3. Concerning the pandemic fatigue scale, the author could be clearer about whether it is a previously validated instrument or was designed specifically for this study.
4. The authors might consider providing more details about why the hypothesis tests were chosen and any assumptions that must be met for these tests. Sharing the model equations for linear and logistic regression models, especially to show the incorporation of the interaction term, would benefit readers.
5. The methods section does not mention how missing data were handled in the analyses. Providing this information would enhance the transparency of the study.
6. Ethics Statement: It would be important to indicate in the main body of the manuscript that written consent has been obtained from all participants.

Results:
1. Descriptive Statistics: You've given an overview of the sample characteristics for both rounds, but it's unclear whether these differences are statistically significant or whether they might influence your findings. This information could be particularly useful given for example the changes in education level between the two rounds. You may at least want to comment on it if you don't want to test the differences.
2. While you've stated the percentage changes in some areas (like pandemic fatigue), it would also be beneficial to include the actual scores so that readers can understand the scale of these changes.
3. Statistical Terms: Clarify what "" represents in your text. As mentioned previously, providing the equation models would be useful for the readers.
4. Tables and Figures: In Table 3, disclosing the units of the different outcomes, particularly the min-max of the possible scores, would enhance reader comprehension of the nature of the variables and their potential distribution. In Figure 3, denoting when interactions are statistically significant would be beneficial.

Discussion
1. The discussion seems to jump from one finding to another, making it difficult to identify the key outcomes of the study. Consider summarizing the main findings at the beginning of the discussion to orient the reader.
2. Consider creating paragraph breaks to separate each major point or finding, to improve readability. For example, the paragraphs from lines 246-252, 253-264, and 265-272 each deal with different aspects and could be broken up more clearly.
3. While the authors have outlined the limitations of the study, a more in-depth discussion of how these limitations could affect the findings would add value to the section. For instance, how might the reliance on internet access skew the results?
4. Subsections could be beneficial to organize the discussion.
5. Vaccination and Pandemic Fatigue: The relationship between pandemic fatigue and vaccination intent is not entirely clear. In lines 291-297, the authors state that the intention to get vaccinated was low in those with higher pandemic fatigue in 2020 but that by 2021, vaccination intention increased without significant association with fatigue levels. The logical link between these two observations could be made clearer. The authors might need to clarify if and how pandemic fatigue influences vaccination intention or if the increase in vaccination intention was due to other factors such as the implementation of vaccination cards and increased access to social events for vaccinated individuals.
6. Changes in Pandemic Measures: Lines 265-272 discuss the level of agreement with pandemic measures decreasing over time and being lower in those with lower fatigue levels. However, the rationale behind this observation is not entirely clear. Why would those with lower fatigue levels agree less with the measures? Is it due to a sense of complacency or confidence in the epidemiological situation improving? This could be clarified to strengthen the logical progression of the discussion.

7. Shift in Concern Levels: The discussion in lines 253-264 implies a shift in concern levels between those with high and low pandemic fatigue from 2020 to 2021. The rationale for this shift is not entirely clear. Why would those with high fatigue be more concerned in 2020 but less so in 2021? Is it due to avoidance behavior as the authors mention, or could there be other factors at play?

8. The authors could be more explicit about recommendations for future work. They have provided some suggestions but expanding on these would be useful. What exactly should future researchers look for or focus on based on the findings of this study?

9. Conclusions and Implications: Finally, the conclusions and implications of the findings could be more logically presented. For instance, the authors might clarify how the observations about pandemic fatigue and related behaviors should inform future public health messaging and policy decisions. How can health authorities consider the levels of pandemic fatigue when designing interventions and awareness campaigns?

PLEASE COMMENT

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

The title is appropriate and concise. However, it could be further enhanced by hinting at the study's exploration of the interaction effects that were tested.

Q 5   **Are the keywords appropriate?**

Yes, the given keywords "COVID-19, knowledge-attitude-behaviour, preventive practices, pandemic fatigue, interactions" seem appropriate for this study. "health behaviors" might be another keyword to consider,

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

There are minor grammatical and syntax errors throughout the text. I recommend thorough proofreading to ensure the text is grammatically correct and the sentences are structurally sound.

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

No.

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

The literature review should have been more up-to-date for an article submitted in early 2023. In addition, the formatting of references needs to be thoroughly checked.

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.