

Peer-Review comments and author responses

Reviewer 1:

Comment: Dear Authors, Thank you for your effort in submitting your manuscript for consideration by this journal. The relevance of the topic and the quality of the text are remarkable. However, since this is a systematic review, I consider it important that you resubmit with a PRISMA flow diagram summarizing the screening process, as well as a detailed description of the statistical and analytical methods used.

Response: *We thank the reviewer for their comments. We have now added flow diagram (Figure 1) and added detailed description of the statistical and analytical methods used in the manuscript.*

Reviewer 2:

Comment: The article investigates the inflammatory basis of fibromyalgia and long-COVID by examining existing human and animal studies. It identifies key inflammatory markers, such as IL-6, TNF- α , and CRP, which are consistently elevated in fibromyalgia patients compared to healthy controls. The results of this systematic review and meta-analysis underscore the role of inflammation in the pathophysiology of both fibromyalgia and long-COVID. Elevated levels of IL-6 and TNF- α were consistently observed in patients with fibromyalgia and long-COVID, suggesting that these cytokines may be key contributors to the symptoms experienced by these patients

Response: *We thank the reviewer for their positive feedback regarding the relevance and quality of the study. The recognition of our findings on shared inflammatory markers, particularly IL-6 and TNF- α , underscores the importance of exploring these cytokines in understanding fibromyalgia and long-COVID.*

Comment: The main argument or thesis presented by the authors, is that both fibromyalgia and long-COVID share common inflammatory pathways, particularly involving elevated levels of inflammatory markers such as IL-6 and TNF- α . These shared inflammatory mechanisms suggest potential commonalities in their pathophysiology, which could inform the development of targeted anti-inflammatory therapies for both conditions. The authors argue that understanding these inflammatory processes is crucial for improving treatment strategies and patient outcomes for fibromyalgia and long COVID. The authors of the article present evidence suggesting that both fibromyalgia and long-COVID involve elevated levels of inflammatory markers, specifically IL-6 and TNF- α . This evidence is derived from studies that have documented increased levels of these cytokines in patients with both conditions. The authors cite research that supports the notion that chronic inflammation may contribute to the symptoms experienced by patients, such as pain, fatigue, and cognitive difficulties.

Overall, the methodology used in the article is effective in generating a hypothesis about the shared inflammatory mechanisms between fibromyalgia and long-COVID. However, the lack of original data, potential bias in source selection, and insufficient consideration of confounding factors highlight the need for further empirical studies to validate the authors' claims.

Response: *We acknowledge the reviewer's observation regarding potential source selection bias and the absence of original data. We have taken steps to mitigate selection bias by using stringent inclusion /exclusion criteria, qualitative analysis for study selection, and detailing these in the updated Methods section. Although we did not generate new data, this systematic review aims to synthesize existing evidence to provide insights and guide future empirical research.*

Comment: The article provides a solid foundation for future research but stops short of offering definitive conclusions.

Response: We appreciate this constructive feedback and agree that our review is intended to generate hypotheses for future studies rather than definitive conclusions. We have revised our conclusions to emphasize the need for further empirical investigations to validate these associations and explore causality.

Reviewer 3:

Comment: Dear authors, first we want to congratulate you on submitting the paper to the PPCR Journal. It is a pleasure to have the opportunity to review it. I believe with a few corrections the paper will be very adequate to be accepted. I attached some comments below.

One simple observation that needs to be done is unifying the references in the scope of the text.

Response: *We thank the reviewer for pointing out inconsistencies in reference formatting. All references have been carefully reviewed and reformatted according to the journal's guidelines for uniformity.*