

18 July 2022

Dear Prof. Lian-Sheng Ma,

Thank you for your letter dated 15 July 2022 and the reviewers' comments and valuable suggestions. We have carefully considered the comments and suggestions of the reviewers and revised the paper accordingly. Details of the revisions and point by point responses are appended below.

Yours sincerely,

Liwei Feng
Corresponding author

Revision and Response to Comments

Reviewer 1:

Lu and colleagues in the present case study entitled 'Effects of illness perception on negative emotions and fatigue in chronic rheumatic diseases: Rumination as a possible mediator', investigated the current status of knowledge of the association of multiple components of illness perception and psychological outcomes (like fatigue and negative emotions) in patients with chronic rheumatic diseases, as well as the potential mediating role of rumination in this relationship. Results showed that perceived identity, chronicity and consequences of illness were significantly associated with fatigue and negative emotions, and these associations were mediated by rumination. The main strength of this manuscript is that it addresses an interesting and timely question, providing a captivating interpretation and describing how rumination is a unique mediator between three components of illness perception, specifically, the identity, cyclical nature and consequences of illness, and negative emotions/fatigue. In general, I think the idea of this article is really interesting and the authors' fascinating observations on this timely topic may be of interest to the readers of World Journal of Psychiatry. However, some comments, as well as some crucial evidence that should be included to support the authors' argumentation, needed to be addressed to improve the quality of the manuscript, its adequacy, and its readability prior to the publication in the present form. My overall judgment is to publish this paper after the authors have carefully considered my suggestions below, in particular reshaping parts of the 'Introduction' and 'Discussion' sections by adding more evidence. Please consider the following comments:

1) Abstract: Please proportionally present background, purpose, methods, results, and conclusion, as the 'Background' section is totally missing.

[The 'Background' section in abstract has been added in the revised manuscript.](#)

2) Introduction: The 'Introduction' section is well-written and nicely presented, with a good balance of information about psychological mechanisms that link rumination and illness perception. In this regard, to deepen the theoretical background of this article and to give a proper analysis of relationship between rumination and negative cognition, leading to a predisposing factor for depression, I would suggest to begin with a theoretical explanation of mood disorders, then a detailed description of pathogenesis of depression, with a particular focus on neural bases, and a description of core cognitive dysfunctions in patients with

depression and, lastly, evidence for the effect of rumination on depression. Nevertheless, I believe that more information about dysfunctional brain circuits underlying depressive disorder would provide a better background here. Thus, I suggest the authors to make an effort to provide a brief overview of the pertinent published literature that offer a perspective on brain regions with altered activity and connectivity in depression, because as it stands, this information is not highlighted in the text. In this regard, I would recommend adding evidence on the implication of frontal lobe circuitry in altered fear extinction features in depressive disorder, with a focus on abnormalities in the ventromedial region of prefrontal cortex (vmPFC), whose smaller volume and altered activity patterns have been observed in patients with depressive disorder, highlighting how frontal lobe dysfunction affects these patients' memory and emotional learning capacity (<https://doi.org/10.1038/s41380-021-01326-4>; <https://doi.org/10.17219/acem/146756>; <https://doi.org/10.1038/s41598-018-31000-9>; <https://doi.org/10.3390/biomedicines10030627>; <https://doi.org/10.3390/cancers13184684>).

The Introduction has been revised accordingly under the newly-added subtitle of Negative emotions.

3) Introduction: In line with the previous suggested reference, I believe that it may be useful adding some evidence that focused on emotion dysregulation and pathophysiological and cognitive models of depressive disorder. In this regard, to provide a more coherent and defined background on this topic, I would suggest focusing on neural and chemical mechanisms underlying depression, for example examining the involvement of neurogenic inflammation and neuropeptides in the pathophysiology of psychiatric and neurological illnesses (<https://doi.org/10.3390/bs11080110>; <https://doi.org/10.3390/biomedicines9101313>; doi: 10.3389/fnbeh.2022.924305; <https://doi.org/10.3390/biomedicines9080897>; <https://doi.org/10.3390/biomedicines10010076>; <https://doi.org/10.3390/biomedicines9050517>; <https://doi.org/10.3390/biomedicines10040849>; DOI: 10.17219/acem/139572).

The Introduction has been revised accordingly under the newly-added subtitle of Negative emotions.

4) The objectives of this study are generally clear and to the point; however, I believe that there are some ambiguous points that require clarification or refining. In my opinion, the authors should be explicit on how they operationally assessed rumination and how they examined the association between negative emotions and fatigue and specific domains of illness perception.

Related information has been added to the objectives of this study: "Rumination was assessed by the Stress Reactive Rumination Scale (SRRS), which was developed to rapidly assess rumination in clinical settings and can assess rumination that is not confounded by depressive symptoms. Additionally, we examined the association between negative emotions and fatigue and specific domains of illness perception by Pearson correlation analyses."

5) Materials and Methods: Data about participants and information about clinical assessment for patients' selection are not adequately explained. For this reason, I would ask the authors to specify inclusion criteria for patients involved in this study, like severity of disorder and pharmacotherapy duration.

The inclusion criteria for patients involved in this study have been specified in Materials and Methods.

6) Statistical analyses: Could the authors better explain why they decided to use the hypotheses of mediation model?

Based on the Common-Sense Model of Self-Regulation (CSM) [18, 19], illness perception may be one potent underlying factor. Ruminative coping style is proposed to be a potential mediator of the association between illness perception and physical and mental health status [20, 21], although substantial evidence is lacking regarding this relationship in rheumatic diseases. The present study thus focuses on the roles of illness perception and rumination in negative emotions and fatigue in RA and SLE patients.

7) Results: I suggest rewriting this section more accurately. To properly present experimental findings, I think that authors should provide full statistical details, to ensure in-depth understanding and replicability of the findings.

The Results section has been rewritten to provide full statistical details and more accurate description.

8) I think the 'Conclusions' paragraph would benefit from some thoughtful as well as in-depth considerations by the authors, because as it stands, it is very descriptive but not enough theoretical as a discussion should be. Authors should make an effort, trying to explain the theoretical implication as well as the translational application of their research.

We have rewritten the 'Conclusions' paragraph to include the theoretical implication and translational application:" In conclusion, we found that illness perceptions played important roles in affecting psychological health in patients with RA or SLE, and rumination was a unique mediator between three components of illness perception, specifically the identity, cyclical nature and consequences of illness, and negative emotions/fatigue, further expanding the theories of CSM to rheumatic diseases and highlighting the important role of cognitions, which are fortunately modifiable, in affecting disease outcomes via regulating probably by inflammatory responses. Our results underscore the importance of incorporating interventions targeting rumination into psychological treatment for negative emotions and fatigue in patients with RA and SLE. Structured programs such as CBT and MBIs may be established by liaison psychiatrists and rheumatologists in hospital chronic illness units to modify patients' cognitions in adaptive ways and improve psychological well-being, functional and clinical-related outcomes, and working environmentl adaptation after discharge."

9) Overall, I suggest submitting your work to an English native speaker to help with some grammar mistakes that can be found in different sections of the manuscript. Overall, the manuscript contains 5 tables, 3 figures and 89 references. I believe that this manuscript might carry important value describing how perceived identity, cyclical nature, and consequences of illness are significantly associated with fatigue and negative emotions in patients with chronic rheumatic diseases and how these associations are mediated by rumination. I hope that, after these careful revisions, the manuscript can meet the Journal's high standards for publication. I am available for a new round of revision of this article. I declare no conflict of interest regarding this manuscript.

The manuscript has been edited by American Journal Experts (AJE). The certificate is uploaded together with the manuscript.

Reviewer 2:

Reviewer #2: In this manuscript, the authors have evaluated "Effects of illness perception on negative emotions and fatigue in chronic rheumatic diseases: Rumination as a possible

mediator". Overall, this manuscript provides valuable and valid data. I do not see any major issues in this manuscript; however, a few minor issues need to be addressed as pointed below:

1) The manuscript must be carefully proofread for grammar, spelling, and punctuation issues.

The manuscript has been edited by American Journal Experts (AJE). The certificate is uploaded together with the manuscript.

2) For the P value, please write the exact values (not $p = 0.000?$). If the p values are too small, please write as a cut off values, eg. $p < 0.00001$.

The exact p values have been specified in the manuscript, as suggested.

3) It is recommended that authors improve the design of diagrams.

The diagrams have been re-drawn and replaced for better design.

4) Use of newer references is recommended.

The citation list has been updated with latest references.

Editorial Office's comments:

1) **Science Editor:** The manuscript has been peer-reviewed, and it's ready for the first decision.

Language Quality: Grade C (A great deal of language polishing)

Scientific Quality: Grade C (Good)

The manuscript has been edited by American Journal Experts (AJE) for language improvement. The certificate is uploaded together with the manuscript. The manuscript has been revised according to reviewers' comments for scientific quality improvement.

2) **Company Editor-in-Chief:** I recommend the manuscript to be published in the World Journal of Clinical Cases. Before final acceptance, when revising the manuscript, the author must supplement and improve the highlights of the latest cutting-edge research results, thereby further improving the content of the manuscript. To this end, authors are advised to apply a new tool, the Reference Citation Analysis (RCA). RCA is an artificial intelligence technology-based open multidisciplinary citation analysis database. In it, upon obtaining search results from the keywords entered by the author, "Impact Index Per Article" under "Ranked by" should be selected to find the latest highlight articles, which can then be used to further improve an article under preparation/peer-review/revision. Please visit our RCA database for more information at: <https://www.referencecitationanalysis.com/>.

As suggested, we have applied the RCA and updated the citation list with the latest cutting-edge references.