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OPEN PEER REVIEW

Characteristics of Functional Connections and Topographical Properties Distinguished the Healthy State and Obsessive-Compulsive Disorder

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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Contents

1 **Original submission** Saereh Hosseindoost, Referee 1, Associate Editor, Editor-in-Chief 2

2 **Revision 1** Referee 1, Referee 2, Associate Editor, Editor-in-Chief 4

Authors' reply to reviewers 5

Reviewer and editor comments 7

1 Original submission

4 comments · 12 Aug 2024 – 25 Aug 2024

Saereh Hosseindoost Reviewer

MINOR REVISION 12 Aug 2024

Dear Editor,
I have reviewed the manuscript titled "Characteristics of Functional Connections and Topographical Properties Could Differentiate Between the Healthy State and Obsessive-Compulsive Disorder." In this cross-sectional study, the authors investigated 57 OCD patients (after 8 weeks of sertraline treatment) and 38 healthy controls using resting-state fMRI and clinical assessments. Functional connectivity was analyzed across the brain, including the DMN, SN, and frontoparietal networks. Despite demographic similarities, OCD patients showed poorer health outcomes. Network analyses revealed altered connectivity in OCD, particularly in the DMN, which correlated with symptom severity.
The manuscript is well-written and well-prepared, but it requires some revisions to be appropriate for publication.
1. The literature review in the introduction is incomplete. It would benefit from including research on sertraline's effects on brain connectivity, particularly through serotonin modulation. If there is evidence linking these effects to Obsessive-Compulsive Disorder (OCD), it should be discussed. Otherwise, a brief overview of how sertraline impacts brain connectivity would be valuable.
2. The rationale, target, and hypothesis of the study need clearer articulation. Currently, they are somewhat vague, leaving the reader uncertain about the study's direction. The authors should expand on these points to provide a more cohesive understanding of the study's objectives.
3. The study's novelty should be more clearly articulated in the final paragraph of the introduction. The authors should clarify what is novel about their work and how it fits within the existing body of research. Discussing similarities and differences with related studies would strengthen this section.
4. The statistical analysis section needs more detail. Some aspects of the analysis appear to be either missing or not fully described. A complete and transparent description of the methods used is necessary to ensure the study's validity.
5. The caption for Figure 1 is unclear and makes it difficult to fully understand the figure. The caption should be revised to provide clearer instructions and explanations of the different parts and panels.
6. Regarding the connectivities between the two groups, the manuscript should provide more details on the General Linear Model (GLM) and Applied General Linear Model used, as well as the specific results derived from these models. While the figures are illustrative, the detailed computational calculations of the networks are not provided. Including this information would significantly enhance the clarity and rigor of the presented findings.
7. The discussion should delve deeper into the molecular and cellular mechanisms underlying the observed connectivity patterns, particularly regarding serotonin modulation. Given the focus on serotonin's role in the patient group, this connection should be more explicitly detailed and linked to the study's findings.

Best regards,

Referee 1 Reviewer

MINOR REVISION 22 Aug 2024

I have read the manuscript. It is within the scope of the journal, and in some specific aspects it does have novelty in the field.
Yes, the title reflects the content. No, there are no abbreviations in the title.

Associate Editor

MINOR REVISION 25 Aug 2024

Dear EIC,
I thank the authors and express my appreciation to the researchers. The manuscript is a valuable piece of research. But some revisions are needed. The authors should revise it based on the comments. Also, minor changes should be made to the abstract:
A summary of the statistical analysis results should be mentioned in the results section.

Editor-in-Chief

MINOR REVISION 25 Aug 2024

Dear Author,
Thank you for submitting the article. It needs some revision. Please revise it based on the reviewers' and AE's comments.

2

Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Response to Reviewers

We sincerely appreciate the time and effort that the editor and reviewers have invested in re-evaluating our manuscript. Their insightful comments and constructive feedbacks have been valuable in enhancing the quality of our work. We have carefully addressed each of their suggestions to further improve our study. The changes are highlighted in turquoise in the manuscript. the applied changes in the text is colored in bright yellow.

Reviewer 2

1.The literature review in the introduction is incomplete. It would benefit from including research on sertraline's effects on brain connectivity, particularly through serotonin modulation. If there is evidence linking these effects to Obsessive-Compulsive Disorder (OCD), it should be discussed. Otherwise, a brief overview of how sertraline impacts brain connectivity would be valuable.

#1. We appreciate this feedback. We have incorporated these concepts in the text and highlighted in yellow.

2.The rationale, target, and hypothesis of the study need clearer articulation. Currently, they are somewhat vague, leaving the reader uncertain about the study's direction. The authors should expand on these points to provide a more cohesive understanding of the study's objectives.

We appreciate your feedback and have included these concepts in the text, with the changes highlighted in yellow.

3.The study's novelty should be more clearly articulated in the final paragraph of the introduction. The authors should clarify what is novel about their work and how it fits within the existing body of research. Discussing similarities and differences with related studies would strengthen this section.

Thank you for your suggestion. We have revised the final paragraph of the introduction to more clearly articulate the study's novelty. The text now highlights what is unique about our work and places it within the context of existing research, including a discussion of similarities and differences with related studies.

4.The statistical analysis section needs more detail. Some aspects of the analysis appear to be either missing or not fully described. A complete and transparent description of the methods used is necessary to ensure the study's validity.

Thank you for your feedback. We have made the necessary corrections and provided additional detail in the statistical analysis section to ensure a more complete and transparent description of the methods used.

5.The caption for Figure 1 is unclear and makes it difficult to fully understand the figure. The caption should be revised to provide clearer instructions and explanations of the different parts and panels.

Thank you for your feedback. We have implemented the necessary revisions.

6.Regarding the connectivities between the two groups, the manuscript should provide more details on the General Linear Model (GLM) and Applied General Linear Model used, as well as the specific results derived from these models. While the figures are illustrative, the detailed computational calculations of the networks are not provided. Including this information would significantly enhance the clarity and rigor of the presented findings.

Thank you for your feedback. We have addressed your concerns by providing additional details on the General Linear Model (GLM) and Applied General Linear Model used in our analysis. We have also included the specific results derived from these models and the detailed computational calculations of the networks to enhance the clarity and rigor of our findings.

7.The discussion should delve deeper into the molecular and cellular mechanisms underlying the observed connectivity patterns, particularly regarding serotonin modulation. Given the focus on serotonin's role in the patient group, this connection should be more explicitly detailed and linked to the study's findings.

Thank you for your feedback. We have revised the discussion to more explicitly detail the molecular and cellular mechanisms, especially regarding serotonin modulation, and linked these to the study's findings.

Reviewer 3

1. Introduction: The introduction needs a clearer logical flow to effectively lead to the research question. The rationale should be better established. Expand the review to include studies on sertraline's effects in OCD, particularly on brain connectivity, to provide a stronger foundation for the research question.

#1. Thank you for the insightful feedback. We have integrated these suggestions into the text and marked the changes in yellow.

2. Flow and Coherence: Improve the introduction's narrative to ensure it logically supports the study's objectives.

Thank you for your valuable feedback. We've refined the introduction to improve its flow and coherence, ensuring it more logically supports the study's objectives.

3.Methods: Clarify the dose of sertraline, the escalation pattern, and participant criteria, including backgrounds and medication status, for better methodological transparency.

Thank you for your valuable feedback. We have incorporated your suggestions into the text and highlighted the changes in yellow.

4. Statistical Analyses: Provide more detail on the statistical methods used, including rationale, data handling, software, and significance criteria.

Thank you for your thoughtful feedback. We have revised the text accordingly and highlighted the updates in yellow.

5. Results: Ensure that the text adequately discusses the results shown in the figures, integrating them into the narrative.

We have addressed your comment by thoroughly integrating the discussion of the figures into the narrative.

6. Figure Captions: Revise the captions for accuracy and detail, clearly describing the variables and findings.

We have responded to your comment and changed the captions.

2 Revision 1

4 comments · 7 Sep 2024 – 8 Sep 2024

Referee 1 Reviewer

ACCEPT 7 Sep 2024

Dear Editor,
After thorough evaluation, I find the manuscript to be ready for publication in its current form, as it meets the journal's standards for quality, originality, and contribution to the field.

Sincerely,

Referee 2 Reviewer

ACCEPT 8 Sep 2024

Dear Editor,
The manuscript is now ready for publication.

Sincerely,

Associate Editor

ACCEPT 8 Sep 2024

Dear EIC,
The great effort in improving the manuscript is highly appreciated. The subject of the manuscript is very important and is one of the issues affecting families, societies, and health workers.
The authors have addressed all the comments. Now, it is acceptable.

Editor-in-Chief

ACCEPT 8 Sep 2024

Dear authors.
Thanks for your valuable efforts in carefully revising the manuscript.