

PRE-SUBMISSION PEER REVIEW

Pre-Submission Peer Review Report for your manuscript titled “The Association between Uric Acid and Metabolic Syndrome in a Middle-Aged and Elderly Taiwanese Population: A Community-Based Cross-Sectional Study” (FLBBZ_2_8)

Dear Author,

Welcome and thank you for giving us the opportunity to work with you! We have carefully reviewed and evaluated your manuscript. The overall assessment of your manuscript presented in this report, along with detailed problem areas and suggested revisions mentioned in your manuscript, will help you make improvements and reduce chances of journal rejection.

For ease of understanding, this report is divided into the following sections:

SECTION 1	TECHNICAL OVERVIEW • Main areas of focus from the Technical Review • Level 1 checks: Assess the originality / novelty of your research, ethical compliance • Level 2 checks: Overview of each section of your manuscript, with an indication of the extent of revisions required • Level 3 checks: Appraise the language, presentation, and readability of your manuscript
SECTION 2	Recommendations and NEXT STEPS
APPENDIX	FAQs

We will be happy to provide further clarifications or answer any queries you may have about this report.

We are committed to supporting you throughout your publication journey with the aim of having your manuscript published in the most appropriate journal. If, however, the manuscript was to be rejected (with major revisions that could have been identified through our service), we will rework the assignment at no additional charge.

We look forward to continuing to be your partner in your publication journey towards acceptance!

Best regards

Section 1: TECHNICAL OVERVIEW

This community-based cross-sectional study investigates the association between serum uric acid levels and metabolic syndrome among middle-aged and older adults in Taiwan. The topic is clinically relevant and the manuscript presents potentially useful findings; however, its overall quality is reduced by several methodological and reporting inconsistencies, including discrepancies in the study population, outcome reporting, statistical results, and interpretation of the ROC analysis. Substantial revision is therefore needed to improve the scientific clarity, internal consistency, and reliability of the manuscript.

To improve chances of a positive review by the target journal, we recommend that the authors address the following major comments:

1. Please emphasize the data collection methods and establish the validity of the data
2. Please revisit the chosen sample size for adequacy and appropriateness
3. Please revisit the figures and tables for completeness
4. The conclusion should discuss the wider implications of the study findings and specify future research avenues
5. The conclusions of the study should be revisited
6. The data has not been appropriately interpreted
7. The data in the figures/tables do not correspond with those in the text
8. The discussion needs to be reorganised
9. The findings are not appropriately discussed in the context of previous literature
10. The findings are not supported by the data
11. The interpretation of the study is not logical
12. The literature survey needs to be more exhaustive
13. The methodology/statistical analysis is not sufficiently appropriate and rigorous
14. The methods/techniques have not been adequately described
15. The references should be updated for recency and relevance
16. The research does not meaningfully further existing literature
17. The research rationale/hypothesis has not been communicated clearly
18. The results need to be revisited for completeness and accuracy
19. The study objective has not been defined
20. The abstract does not clarify the purpose and/or significance of the study
21. The abstract does not clearly describe the main methods, results, and/or conclusions

The following are the most important strengths of the manuscript that the authors must retain through the process of revisions:

1. The study recruited participants from 28 villages using a cluster-randomized approach, which strengthens the real-world relevance of the findings for the Taiwanese population.
2. The final sample of 400 participants exceeded the calculated minimum sample size of 352, providing more robust findings.
3. The manuscript evaluates the relationship between uric acid and metabolic syndrome using group comparisons, correlation analysis, multivariable logistic regression, and ROC analysis, allowing the association to be examined from several statistical perspectives.

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LEVEL 1 CHECKS – Quality of research

REVIEW PARAMETER	DESCRIPTION	RATING
Novelty	Does the work add to knowledge already available (original research)? <i>Notes: The study builds on existing evidence suggesting an association between elevated serum uric acid and metabolic syndrome by examining this relationship in a community-based Taiwanese population. Its main potential contribution is the assessment of this association in middle-aged and older adults using multivariable logistic regression and ROC analysis; however, the manuscript does not currently explain clearly how this study differs from previous work or what specific knowledge gap it addresses.</i>	FAIR
Rationale	Is the rationale for the research made credible with appropriate references to both scientific principles and literature review? <i>Notes: The reason for conducting the study is only partly explained. The Introduction describes the burden of metabolic syndrome and summarizes previous evidence linking hyperuricemia with metabolic syndrome, but it does not clearly identify the specific knowledge gap. The literature review should be strengthened by adding recent systematic reviews and meta-analyses on serum uric acid and metabolic syndrome, prospective cohort studies examining whether uric acid precedes development of metabolic syndrome, recent studies from Taiwan or other East Asian populations, and updated mechanistic evidence on insulin resistance, adiposity, endothelial dysfunction, and renal handling of uric acid.</i>	FAIR
Ethical Compliance	Does the research meet standard good practice guidelines for journals to ensure that ethical and responsible research is published, and that all necessary consents and approvals have been obtained from authors to publish their work? <i>Notes: The manuscript does not currently provide an adequate ethics statement, although the study involved human participants, questionnaire data, review of medical records, and collection of blood and urine samples. The authors should therefore provide the name of the Institutional Review Board or ethics committee, the approval number and date, and a statement confirming that the study was conducted in accordance with applicable ethical standards.</i>	POOR

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LEVEL 2 CHECKS – Manuscript structure

REVIEW QUESTION	RATING	EXTENT OF REVISIONS REQUIRED
Are the study HYPOTHESIS & OBJECTIVES clear, specific and testable? <i>Notes: The hypothesis and objectives are not stated clearly, specifically, or in a directly testable form. The Introduction ends by noting that the relationship between uric acid and metabolic syndrome remains uncertain, but it does not clearly state the study objective or a prespecified hypothesis.</i>	FAIR	CONSIDERABLE
Are the METHODS presented in full details, so that an interested reader can repeat the experimentation? <i>Notes: Detailed comments with recommendations for improving this section have been included in your manuscript file.</i>	POOR	MAJOR
Is the STUDY DESIGN sound and appropriate to answer the research questions? <i>Notes: The cross-sectional study design could help to identify the association between metabolic syndrome and uric acid levels; however, it cannot provide a causal relationship.</i>	GOOD	MINOR
Is the STATISTICAL ANALYSIS sufficient and appropriate? <i>Notes: There are multiple revisions suggested with regards to the statistical analysis conducted. Detailed comments with recommendations for improving this section have been included in your manuscript file.</i>	FAIR	CONSIDERABLE
Are the RESULTS clearly stated and presented in text, tables and figures? <i>Notes: Revisions for the results are required in multiple sections. Detailed comments with recommendations for improving this section have been included in your manuscript file.</i>	POOR	MAJOR

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Is the DISCUSSION precise, interprets findings, compares existing research, and shows value addition? <i>Notes: Detailed comments with recommendations for improving this section have been included in your manuscript file</i>	FAIR	CONSIDERABLE
Do the CONCLUSIONS highlight the importance of findings, state limitations, and suggest future direction? <i>Notes: Revisions are required in this section. Detailed comments with recommendations for improving this section have been included in your manuscript file.</i>	FAIR	CONSIDERABLE
Is the CITED LITERATURE relevant, selective, recent and sufficient? <i>Notes: The literature are relevant; however, the manuscript contains several outdated citations. The introduction and discussion need to be cited with more recent literature.</i>	FAIR	MAJOR

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LEVEL 3 CHECKS – Language, flow and formatting

REVIEW PARAMETER	DESCRIPTION	EXTENT OF REVISIONS REQUIRED
Language & Presentation	Spellings and grammar, effectiveness of sentence construction, organization within paragraphs	CONSIDERABLE
Formatting & Citation	Accurate formatting and citation of text, tables, figures, and references	MAJOR
Readability & Style	The style of writing communicates the scientific message in a clear and simple manner	CONSIDERABLE

Section 2: RECOMMENDATIONS & NEXT STEPS

Detailed comments from the technical expert can be found in the manuscript file. Comments are structured into focus areas and recommended actions.

- **Focus areas** are potential gaps that might be raised by journal peer reviewers
- **Recommended actions** are solutions recommended by our expert to fix these problems. Please follow the recommended actions and make the suggested revisions.

We strongly recommend that you incorporate the suggested revisions. If the suggested revisions are not adequately completed, it is likely that the manuscript may receive a desk rejection once submitted to the target journal.

NEXT STEPS FOR YOU

Please contact us if you have any queries about the peer review report.

Thank you for choosing us as your publication partner!

Appendix: FREQUENTLY ASKED QUESTIONS

Q: Who reviews my manuscript? What is the experts' qualification?

A: Our reviewers have a minimum qualification of a PhD in your relevant subject area and have extensive experience in publishing and peer-reviewing manuscripts. These experts also have experience of writing and publishing their own manuscripts in peer-reviewed journals. Many of our experts even serve as peer reviewers on journal editorial boards.

Q: Do I have to make ALL the changes suggested by the reviewer in the report and the manuscript?

A: We highly recommend that you review and address all the focus areas and recommendations for improvements that we have suggested. These will help with improving the scientific rigor of your manuscript.

Q: I do not fully understand / agree with some of the reviewer comments

A: Please respond in the 'comments' box with your queries about focus areas or recommendations for improvement. The reviewer will respond to these in the free round of review after you have addressed all requests for changes/revisions.

Q: Will you make revisions / correct the areas flagged by your reviewers?

A: No, we will not make any changes to the manuscript. We will provide suggestions for improvement of your manuscript by highlighting gaps in scientific content (similar to a journal peer reviewer). We will review the changes you have made and give you further comments, as needed.

Q: Do you guarantee publication?

A: Publication depends largely on the quality of your research and is a subjective decision that the journal editor takes based on several factors. Therefore, we cannot guarantee publication.

Q: Is there post service support?

A: You can make revisions and send the manuscript back to the expert for one round of free review. Please make ALL revisions possible before sending back the manuscript, so that the review of the revised manuscript will be more effective.