Peer Review Report

Review Report on A new global air quality health index based on the WHO Air Quality Guideline Values with application in Cape Town

EVALUATION

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

The development of an Air Quality Health Index (AQHI) and it's application in Cape Town show this AQHI to be a robust and useful tool to assist with risk communication. This AQHI also takes into account low levels of pollution in a better way than conventional AQIs.

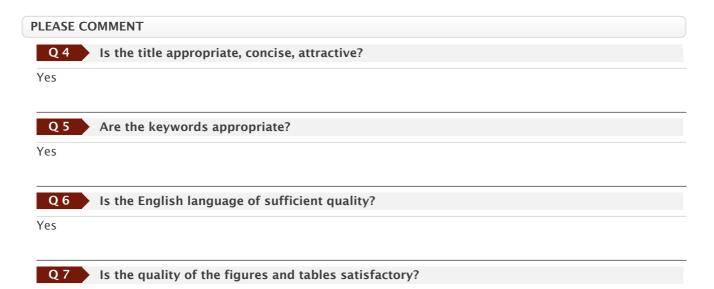**Q 2**   **Please highlight the limitations and strengths.**

Strengths: use of latest literature and WHO 2021 guidelines; application of AQHI to ground-based data for Cape Town for verification.

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.**

I thoroughly enjoyed reading this well written manuscript and found the development of the AQHI to be well constructed and explained. The methods are appropriate as are the analyses and the relevance of the tool for application elsewhere is provided.

I would have liked to know what ER% meant sooner than where it currently appears, please.

I also got a little lost in the use of weights and if this could be made clearer, that would help readers.

PLEASE COMMENT

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

Yes

Q 5   **Are the keywords appropriate?**

Yes

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

Yes

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

No answer given.

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

Yes

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: |

Minor revisions.