Reviewer's report

Title: Morbidity burden of respiratory diseases attributable to ambient temperature: a case study in a subtropical city in China

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Reviewer: Wei Ma

Reviewer's report:

This paper assessed the health burden of respiratory diseases attributed to different temperature ranges using data from a hospital in southern China. The authors found that both low and high temperature were associated with an increased risk of morbidity of respiratory diseases, and moderate hot contributed most of excess respiratory outpatient visits caused by ambient temperature exposure. I think it is an interesting topic and will benefit readers if interpreted correctly. Generally, the paper is well written, but some problems need to be addressed.

Major comments

I think the results that both low and high temperature were associated with an increased risk of morbidity of respiratory diseases and that respiratory morbidity risk for young population mainly caused by hot weather, but a reverse J-shaped was observed for the elderly are good enough. The conclusion and the title of the paper are misleading. Moderate hot contributed most of excess respiratory outpatient visits caused by ambient temperature exposure just because most of days in the study time series are at moderate hot temperatures. There is also a lack of biological explanation for this conclusion. I do not see necessity of paying attention to moderate hot days.

Minor comments

1. The disease investigated should be clearly described. The authors investigated total respiratory diseases, and some individual respiratory diseases including bronchiectasis, chronic obstructive pulmonary disease (COPD) and asthma, but this is not clearly described in Abstract (Page 2, Line 26, 'morbidity for respiratory diseases' should be 'morbidity for total respiratory diseases').

2. Earlier comment about the geographic area from which the municipal hospital drew cases which is important for readers to understand the results is not addressed.

3. From the location of the hospital and air monitoring stations, why used the average air pollutants from five stations rather than data from the nearest station.

4. Calculation of AR should be briefly described rather than citing a reference.

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