Author's response to reviews

Title: Lung function, asthma symptoms, and quality of life for children in public housing in Boston: a case-series analysis

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Author's response to reviews: see over
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To Whom It May Concern:

Following are our responses to reviewer comments for the article entitled “Lung function, asthma symptoms, and quality of life for children in public housing in Boston”. In addition, we have uploaded our revised manuscript and figures to the Environmental Health website.

Response to comments from editor:

We have revised the manuscript to be in accordance with journal requirements and to respond to additional comments by the editors. Specifically:
- We have modified the title to include study type and remove unnecessary capitalization.
- We corrected the addresses as requested.
- We removed hyphens from line breaks as requested.
- We double-spaced the manuscript.
- We corrected the text under competing interests.
- We added an abbreviations section at the end of the text.
- We revised the authors’ contributions section, and have removed some authors from our original author list who did not meet the journal requirements for authorship.
- We resubmitted the figures as PDF files, shortening the figure titles and placing some text in the legends beneath the figures
- We corrected the sentence regarding coordinated improvements to better reflect what is meant by “This”

Response to Manolis Kogevinas:

We thank Dr. Kogevinas for providing helpful feedback. We agree with the comment that our analysis represents a case-series analysis and have changed the title to reflect this.

We also agree that selection bias is somewhat of a concern in terms of the generalizability of the findings, but feel that it does not influence the conclusions internal to our analysis. Given our recruitment techniques, our cohort represents a convenience sample of willing participants, and no information on non-response is available. Asthma diagnosis and categorization was based on spirometry and questions about symptoms in the past two weeks, as well as diagnosed medications, so we believe that recall bias is unlikely in this context and that the asthma diagnoses are correct. We have added some text to the manuscript to emphasize that our goal was not to select a representative random sample of asthmatics from these developments, but rather to find individuals willing to participate in an intervention study. We have also clarified our approach for asthma severity classification.
For the second comment, we have added an abbreviations section listing the acronyms in the table and text.

Response to Nuha El Sharif:

Major comment: We agree with Dr. El Sharif that some of the univariate associations would be important to present, as the multivariate regressions may mask important relationships between BMI or allergy status and health outcomes. We have revised Table 6 and our corresponding discussion to give the univariate relationships between numerous risk factors and health outcomes, including BMI and allergic sensitization vs. lung function, symptom severity, and quality of life. Because of the extremely high allergy prevalence, we had not previously considered allergy to any measured substance, but have added that comparison to Table 6 as suggested (it was not a significant predictor in any of the regressions). Finally, we have added text emphasizing caution in interpretation given the convenience sample and sample size.

Minor comments:

- We made the requested addition of the ages of the children to the abstract. Of note, the BMI results were in the manuscript, and have been emphasized to a greater extent in the regression models.
- Although the caregiver could theoretically be a father or grandparent, in all cases, the primary caregiver of the child was female. In the intake questionnaire, we asked specifically to speak to “the person who knows most about the asthma treatments the child receives”. We added some text to the methods section to emphasize that this was the selection process.
- The actual assent form age was 8, not 6 – this was a typographical error on our part, which was been corrected.
- In our manuscript, we do actually present the results for the caregiver’s quality of life (the PACQLQ). See, for example, the first paragraph of the “Quality of Life” section, as well as Tables 5 and 6 and related discussion.
- We used 2 mm for a positive wheal to follow the Inner City Asthma Study protocol. As indicated in Kattan et al. (1997), their protocol indicates that a 2 mm wheal is considered positive.
- We did include BMI as one of the risk factors in our regression models for lung function, respiratory symptoms, and quality of life (see p. 16, where we list the covariates considered). To present information about the univariate relationship between BMI and respiratory health, we have revised Table 6, as mentioned above.
- We have checked the “% with cockroach allergy” statistic in Figure 1, and it is correct (59%).
- For Tables 2-4, there are a limited number of missing values; of the 78 children, we have sample sizes between 74 and 77 for all of the listed questions, and of the 61 caregivers, we have sample sizes between 57 and 59. The missed values are simply because of non-response to the given question. As we could not ascertain the reason for non-response and there are only 1-4 missing observations per question, having text regarding “lost data” would not seem warranted.
- We agree with the reviewer that further exploration of the BMI results is useful. As mentioned above, we have added some analyses regarding the relationship between BMI and respiratory symptoms, and we added additional text to the Discussion about the potential impact of obesity.