Author's response to reviews

Title: Asthma in Black African, Black Caribbean and South Asian adolescents in the MRC DASH study: a cross sectional analysis.

Authors:

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Dear Dr Neilan,

Re: Manuscript no. 1632818168262806

Thank you for forwarding the helpful comments from the reviewers. The revised paper is much improved because of this. Below are the responses to points raised by the reviewers.

Reviewer 1
Comment 1
Exclusion of 1853 children from the analysis because of other mixed ethnicity and other ethnicity results in the loss of more than 30% of the sample.
Response 1
Children from these groups were excluded from the sample as they were from a heterogeneous group of numerous ethnicities. There were not enough numbers of specific mixed groups (other than the Mixed Black Caribbean/White UK group). It is conceptually confusing to combine these groups with different cultural, biological and material exposures, and it yields uninterpretable results. Mixed ethnicity is the future of Britain but the meaning of this category is still poorly understood and needs further research. As recommended by the reviewer, we have added the asthma reportage for the combined group in the discussion along with these caveats.
C2
The authors have not taken into account the multilevel nature of the data.
When resubmitting the authors may want to look at:

R2
We apologise for the lack of clarity in the text. The effect of clustering in schools on standard errors and confidence intervals was accounted for in all models using the xtlogit command in Stata with the random effect option. We have amended the statement in the methods and added statements to the footnotes of each table to make this clearer.

We thank the reviewer for alerting us to this recent paper. We have cited it in the discussion.

Reviewer 2
C1
In the abstract, the objective focuses on ethnic differences in the prevalence of asthma (description + explanation). In the introduction, however, the authors add a research question on the association between risk factors and asthma.

R1
This analyses was undertaken to investigate ethnic differences in the prevalence of asthma and in the distribution and contribution of various asthma risk factors. We believe that both of these research questions are relevant when looking at ethnic differences in a disease outcome. ‘Risk factors’ here refer to the risk from social and psychosocial exposures. DASH is one of the few studies that were designed specifically to examine the effect of these exposures on differences in health outcomes within and between ethnic groups to gain insight about the direct and indirect causal pathways between ethnicity and health outcomes.

C2
In addition to this, I do not understand why the association between risk factors and asthma is presented for each ethnic group separately. Given the research question of explaining asthma inequalities, one would expect the analyses to focus on the associations in the overall population, controlling for ethnicity.

R2
See response to Comment 1. Controlling for ethnicity is important but can be difficult to interpret due to the effect of unmeasured covariates (see Kauffman and Cooper 2001; Cooke et al 2008).

C3
Given the fact that asthma prevalence was based on self-reported data, could the lower prevalence in some ethnic groups be the result of an impaired
accessibility of the health care system for these groups?

R3
We agree that this is possible and have discussed the likelihood for this in the limitations paragraph on page 14.

C4
I understand from Table 3 that the data have not been corrected for ethnicity. It seems to me that this biases the results, as the different strata by generational status partly reflect differences between ethnic groups.

R4
We were particularly interested in teasing out the existence of an overall effect of generational status and length of residence in the UK on asthma. We reran the analyses for Table 3 with adjustment for ethnicity and found that the coefficients for parental asthma status did not change and there was also no significant interaction between ethnicity and parental asthma status. We have added a sentence to the paragraph on page 10 to reflect this.

C5
The increased risk of asthma among mixed white/black Caribbean population could not be accounted for by known risk factors. How would the authors explain this finding?

R5
This is difficult to understand with the data we have. We suggest in the Discussion that this may be due to the measure of SES we used (measuring SES using self-reports from children is often problematic) but one cannot rule out the possibility of socio-cultural biological interaction that may increase susceptibility in this group.

C6
The authors state at p. 7 that the effect of clustering in schools was examined in the statistical analyses. I could, however, not find the outcome (nor the interpretation) of these analyses.

R6
Please see response to reviewer 1, comment 2.

Minor comments
C1
I would suggest to include the distribution of risk factors across ethnic groups in a Table (data p. 8).
Table 1 amended as recommended

C2
The conclusion in the abstract refers in particular to risk factors for asthma. This does not fit the central aim of this study, which relates to ethnic inequalities in asthma.

R2
We have amended the abstract conclusion to reflect more clearly our key point of the potential effect of socio-environmental exposures.

We hope you will find the revised manuscript suitable for publication.

Yours sincerely,

M Whitrow
S Harding