Author's response to reviews

Title: Self-reported racial discrimination, response to unfair treatment, and coronary calcification in asymptomatic adults - the North Texas Healthy Heart Study

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Author's response to reviews: see over
Dear Editors,

We want to express our gratitude for the reviewers’ comments, suggestions, and insight. Please find below a point-by-point response to each reviewer’s comments:

**Reviewer’s report #1:**
This is a well-written paper that adds an important finding to research on the health effects of racial discrimination. It has a few areas for improvement that should be addressed before publication.

Minor Essential Revisions
Reviewer’s comment
p. 5 The authors note that discrimination is ‘conceptually defined as a source of chronic stress. However, it has also been studied as an acute and lifetime stressor. See (Pascoe and Richman 2009) for details. This paper should be cited as the first meta-analysis in this area along with the following review: (Williams and Mohammed 2009)

*Author’s response*
This is an excellent point. We added these papers and added to the text to reflect how discrimination is also conceptualized as an acute and lifelong chronic stress.

Reviewer’s comment
p. 5 Reference (28) should be cited after this sentence: ‘However, investigations of racial discrimination and subclinical CVD are limited. The authors should also cite at this point (and perhaps others) the following relevant study: (Friedman et al. 2009)

*Author’s response*
These are excellent references that had already accessed. These were added.

Reviewer’s comment
p. 5 & p. 14: In addition to (14), there are other studies that support the distinction between active and passive coping which should be cited here. See (Williams and Mohammed 2009 ) and (Brondolo et al. 2009a).

*Author’s response*
We have reviewed these papers as well and find them excellent and very fitting. They were added.

Reviewer’s comment
p. 10 As noted in (33), you should refer to ‘self-reported discrimination’ rather than ‘perceived discrimination’ as because while self-reported experiences must be perceived, not all perceived experiences are necessarily reported, depending upon individuals’ willingness or ability to report them.
Author's response
This point is very well taken and previously discussed amongst the study team. Our intention for leaving it as “perceived” was to mirror the literature and instrument used to measure discrimination. Nonetheless, we also agree with the review's valid point. Changes were made to manuscript where appropriate, including the title of the manuscript.

Reviewer's comment
p. 11 The authors should provide a little more detail on how they examined interaction between key variables and also how they determined that there were no collinear relationships.

Author Response:
These points have been clarified in the Statistical Analysis section of the Methods. The first part of the second paragraph has been changed to the following.

“The multiple logistic regression model assessed potential interaction for discrimination*response to unfair treatment and discrimination*race/ethnicity in the final model. Multicollinearity was assessed using Tolerance and Variation Inflation Factor (VIF) with all variables in the final model. No collinear relationships were identified.”

Reviewer's comment
p. 11 A mediation analysis is not a ‘sensitivity analysis’ and should not be referred to as such. More detail on what criteria were used to determine mediation is required in the Methods.

Author Response:
Thank you for bringing this to our attention. Our previous description was not accurate. A sensitivity analysis was performed to see if including depression symptomatology in the model improved the fit of the model. This was performed since there is not strong evidence in the literature to include depression. We ran two multiple logistic regression models – one with depression and one without depression. The -2 Log Likelihood was 507.074 when depression symptomatology was included and was 508.103 when it was not included. Therefore, we concluded that depression symptomatology should not be included in the final model. The following was added to the Statistical Analysis section of the Methods.

“In addition, a sensitivity analysis was performed to assess whether depression symptomatology (i.e, CES-D) should be included in the final adjusted model. This was examined due to a lack of literature supporting the inclusion of depression symptomatology and the lack of significance in the unadjusted association between depression and CAC. A full regression model was composed with depression, and another model was composed without depression. The change in the -2 Log Likelihood was used to assess change in
Including depression symptomatology in the model decreased the -2 Log Likelihood.

Reviewer’s comment
p. 14 ‘those experiencing discrimination were approximately 3 times more likely to have CAC present’ When using logistic regression and hence odds ratios it is best to report that ‘the odds of having CAC present were approximately 3 times higher for those experiencing discrimination’ Given that about 30% of respondents reported discrimination, the odds ratios reported would differ considerably from the equivalent relative risk.

Author’s response
This was rephrased in the manuscript and in the abstract

Reviewer’s comment
Reference to discrimination as a stressor in the Introduction and Conclusion may benefit from reference to the following publication: (Brondolo et al. 2009b)

Author’s response
This was also added.

Reviewer's #2 report:
I believe this is a potentially ground-breaking study, which will be very useful for developing our understanding of the pathways between racism and CHD, and ill health more generally. The sample power is limited, so the work requires some replication, but it is able to provide good indication for the direction of that future work.

Reviewer’s comment
I am concerned that the classification of anyone who has smoked 100 cigarettes in their lifetime as a smoker will not be discriminatory, and this variable may be coded more usefully

Author’s response
We appreciate the reviewer’s comments. We have left this variable as is since this was directly taken from the BRFSS. Moreover, expected differences were found in the bivariate analyses with smoking being significantly associated with coronary calcium scores.

Reviewer’s comment
I would be grateful for some clarification what the 'controlled environment' mentioned on page 7 is.

Author’s response
We changed the word “controlled” to a more detailed description.
Reviewer’s comment
Please describe the models more comprehensively. What do you mean by ‘crude LR’?

Author’s Response:
Crude logistic regression refers to a bivariate model with one independent variable and one dependent variable. Therefore, no adjustments are made for other potential confounders. References to crude logistic regression have been changed to simple logistic regression or referred to as an unadjusted model. This has also been changed in the tables. The title now states ‘simple logistic regression’, and the footnotes state OR=crude or unadjusted odds ratios. Models that adjust for potential confounders are referred to as adjusted models or multiple logistic regression models.

Reviewer’s comment
Avoid repeating in the text figures which are in tables, particularly confidence intervals.

Author’s response
The repetition was removed from the text. We mirrored results from other manuscripts published with BMC Public Health.

Reviewer’s comment
Response to unfair treatment was found to significantly modify this relationship’ (page 13): I can’t locate this model in the tables.

Author’s response
To be stewards of page space, we only reported these finding in the text and not in table format since a table would have not provided any additional information than was simply explained in the text.

Reviewer’s comment
More consideration is needed in the discussion of the problems associated with recognising (for researchers and victims), measuring and analysing racism and how this might have affected these findings. It is too simplistic to assume that a report of one incident of racism is simply that, and that your findings do not in part uncover the effect of ‘cumulative experiences of unfair treatment’ (page 16). You could start by looking at Karlsen and Nazroo (2002) in the American Journal of Public Health, or some of the work by Nancy Krieger.

Author’s response
This is an excellent suggestion by the reviewer. We have added several sentences to the conclusion section and the references.

Reviewer’s comment
I’m not aware that there is evidence that ‘people from different ethnic groups differ in their response to stressful situations’ (page 16), more that people from
certain ethnic group experience more and particular types of stressful situations.

Author’s response
We have modified the sentence to allude to future directions of research and did not attempt to make any factual statements. The sentence was rephrased to, “Focused efforts to elucidate whether racial and ethnic minorities differ in response to stressful situations, or types of stressful situations, may provide valuable insight for prevention and amelioration of CVD burden.”