Author's response to reviews

Title: Childhood school segregation and adult sense of control in the African American Health cohort

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Author's response to reviews: see over
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The Editors
BMC Public Health

Dear Mr. Jimmar Dizon:

My colleagues and I were delighted to receive your May 27th invitation to revise and resubmit our manuscript, which bears your manuscript number 1035412512656003. Based on the Associate Editor and two Reviewers’ very thoughtful comments and suggestions, our manuscript is now re-titled:

“Childhood school segregation and later life sense of control and physical performance in the African American Health cohort.”

We continue to believe that this work is highly appropriate for BMC Public Health because personal control has traditionally played a key role in the study of health and health behavior in older adults, and the rapidly growing proportion of older adults in the world makes this a crucial issue for public health. Simply put, people who feel that they have control of their lives have been consistently shown to know more about their health, to be more likely to quit smoking, start exercising, or maintain normal weight, and to engage in other preventative behaviors, all of which leads to better self-rated health, fewer illnesses, and lower mortality rates. Moreover, we now demonstrate that not only was childhood school segregation associated with higher sense of control scores in later life, but that these higher sense of control scores were associated with better physical performance.

We have taken the extensive comments of the Associate Editor and the two Reviewers to heart, and worked diligently to address them. Because the Associate Editor’s comments and those of the second Reviewer (second by date—Dr. O’Hara) were identical, we address them together, and then the comments of the first Reviewer. Before doing so, however, we wish to identify the three most significant, main changes to the manuscript.

The Three Main Changes

The first is that when the analyses for the original manuscript were underway, it was discovered that 20 non-response cases had been misclassified as permanently lost-to-follow-up. These cases were reassigned to our best interviewer, who subsequently obtained completed interviews with 16, bringing the 2010 sample size up to 582. As a result, we rebuilt the 2010 data analytic file from scratch, and have included the 16 “found” cases in the analyses.
The second major change is that based on recommendations of the Associate Editor and Reviewers, we reconsidered the conceptual justifications for the proposed interaction terms. Moreover, while we included them in analyses (not shown), we did so only after all other variables were in the model, and found that neither reached statistical significance nor significantly improved the fit of the models. Thus, we have eliminated the presentation and discussion of the interaction terms from the revised manuscript.

The third major change based on the recommendations of the Associate Editor and Reviewers is that we have added an assessment of whether higher sense of control scores in the AAH cohort were actually associated with better physical performance. To do this, we have modeled 8 standard epidemiologic performance tests using only the sense of control scores to start. We then add the school segregation measures, and finally we add all of the other variables from the previous models (i.e., everything shown in Table 2). At all stages of these new analyses, the sense of control is independently associated with 6 of the 8 physical performance tests, providing strong evidence that sense of control matters for the health of the AAH participants.

14 Comments from the Associate Editor and Reviewer 2

1. We have clarified the language throughout about hypotheses vs. conjecture.

2. As we have indicated above, both the gender-based and region-of-schooling-based interaction hypotheses and testing have been dropped. Although we tested for these interactions (one at a time) in Models 6 and 7 (not shown) the interaction terms neither reached statistical significance nor significantly improved the fit of the models.

3. We now address the elephant in the room. This is done in the conclusions section, which has been completely rewritten. We have made it crystal clear that our work should not be misconstrued as saying that desegregated schooling was bad social policy. Rather, our work suggests that desegregated schooling for this cohort, which experienced it shortly after the 1954 Brown v Board of Education U.S. Supreme Court ruling, appears to have had an unfortunate, unintended consequence. Assuming that our results will be confirmed by others, we now identify the broad outlines of the different ways that changes might be made to overcome these unfortunate, unintended consequences.

4. As we have indicated above, both the gender-based and region-of-schooling-based interaction hypotheses and testing have been dropped. Although we tested for these interactions (one at a time) in Models 6 and 7 (not shown) the interaction terms neither reached statistical significance nor significantly improved the fit of the models.

5. We have clarified why the covariates and potential confounders are included in the models. Specifically, page 13 now notes that:

“Our hypotheses specify independent associations between childhood school segregation and the sense of control in later life, and between the sense of control and physical performance in later life. Therefore, it is essential that
traditional predictors of the sense of control be included as covariates, and that potential confounders (such as racial attitudes and beliefs, and resilience) be included as well. While including all these covariates and potential confounders might result in over-adjustment, this is a conservative error that results in the most rigorous evaluation of whether childhood school segregation is independently associated with the sense of control in later life, and whether the sense of control in later life is independently associated with physical performance.

6 and 7. We adjust for self-rated health for the reasons specified above (see 5). As indicated above, we now include an analysis of the association between sense of control scores and 8 physical performance tests. At all stages of these new analyses, the sense of control is highly associated with 6 of the 8 physical performance tests, providing strong evidence that sense of control matters for the health of the AAH participants. We chose to use physical performance measures because, as we now note on page 15:

“Although a number of self-reported measures of physical abilities are available in the AAH (indeed, in predicting the sense of control we already adjust for self-rated health), we focus on physical performance assessments. The reason for this was that the association between the sense of control and self-reported measures of physical abilities would be viewed as “weaker” evidence of the underlying relationship because both are self-reports and perceptions. Therefore, associations between the sense of control and physical performance assessments using standard epidemiologic field methods and well-established data collection protocols represent “stronger” evidence that is less likely to result from methodological artefacts.”

8. We have dropped reference to the St. Louis Voluntary School Desegregation Plan, because as Reviewer 2 notes, it is not relevant to the argument at hand.

9. We have clarified why the cut-off score on the MMSE was used as a sampling criterion.

10. All hypotheses are now presented in the introduction, and the comingling of measures, analyses, and hypotheses has been eliminated.

11. As we have indicated above, the gender-based interaction hypothesis and testing have been dropped, and along with them, references to John Henryism.

12. Only the essential descriptive data is presented, and Table 1 now includes the sense of control and physical performance measures.

13. The focus and the presentation of the regression analyses (all three) have been tightened and revolve around the role of segregated schooling (for the first two), and the sense of control (for the third), as appropriate.
14. It was an excellent suggestion to look at the components of the sense of control score to better characterize what was actually happening. This has now done (although it is not usually), and indicates that the effect almost entirely involves the “denying control” component.

9 Comments from Reviewer 1

1-2. As we have indicated above, we now include regression analyses of the association between the sense of control and physical performance to demonstrate that the beneficial effect of childhood segregated schooling on the sense of control in adult life ultimately makes a difference on their health as well. With respect, however, we have not examined the effects of childhood segregated schooling on either socioeconomic status or physical performance in this manuscript, although we emphasize here that both segregated schooling and socioeconomic status are included as adjustor variables in the physical performance models. The reason for this is that we believe such analyses would detract from the focus of the manuscript itself. Indeed, they represent rather different study questions than the ones we have proposed, and our plan is to address them in subsequent manuscripts.

3. Thank you very much for the reference to Pettigrew’s work. We have incorporated it into the introduction, where it does provide an excellent conceptual backdrop for why desegregation is not the same as integration.

4. We have clarified why individual vs. neighborhood measures of school segregation are better, and why residential segregation is not an appropriate substitution for school segregation.

5. Racial consciousness was included because it may be associated with both childhood school segregation and the sense of control, and as noted in the manuscript (and stated above) our focus is on estimating the net association between segregation schooling and the sense of control.

6-7. As we have indicated above, the St. Louis desegregation plan is no longer referenced, and the gender-based and region-based interaction hypotheses have been dropped.

8. The title has been appropriately changed.

9. The new conclusions section now focuses on the implications of our findings, assuming that they will be corroborated by others.

Finally, we have uploaded two complete versions of the revised manuscript. One used the “track changes” mode, and the other provides a “clean” version in which all of the “track changes” have been accepted. The former reveals exactly what has been changed (which is rather extensive), while the latter is far easier to read.
In re-submitting this manuscript, I affirm that each of the authors have participated sufficiently in the conception and design of this work and the analysis and re-analysis of the data, as well as the writing and revision of the manuscript, to take public responsibility for it. Specifically, FDW conceived and planned the analyses reported here, performed all data analysis, and wrote and revised the manuscript. DKM conceived the overall plan for the AAH study, and contributed to the review of the analytic approach and revision of the manuscript. TKM contributed to data preparation, review of the analytic approach, and review and revision of the manuscript. JPM, MS, and EMA contributed to review of the analytic approach and review and revision of the manuscript. We believe the manuscript represents valid work. We have all reviewed the final version of the submitted manuscript and approve it for publication. Neither this manuscript nor one with substantially similar content under our authorship has been published or is being considered for publication elsewhere. Finally, if requested we shall produce the data upon which the manuscript is based for examination by yourself or your assignees. We certify that we have no affiliation with nor involvement in any organization or entity with a direct financial interest in the subject matter or materials discussed.

I may be reached directly on 319-384-3821, or by e-mail at fredric-wolinsky@uiowa.edu. I look forward to hearing from you.

Sincerely,

Fredric D. Wolinsky, Ph.D.
The John W. Colloton Chair