Author’s response to reviews

Title: The associations of perceived neighborhood disorder and physical activity with body mass among African American adolescents

Authors:

Akilah Dulin-Keita (akilah_dulin_keita@brown.edu)
Herpreet Kaur Thind (herpreet@uab.edu)
Olivia Affuso (oaffuso@uab.edu)
Monica Baskin (mbaskin@uab.edu)

Version: 5 Date: 30 January 2013

Author’s response to reviews:

January 29, 2013

Omar Khan, MD
Editor
Medical Director
BMC Public Health

RE: MS ID# 3109271398087128

Dear Dr. Khan,

Thank you for your review of our manuscript entitled “The associations of perceived neighborhood disorder and physical activity with body mass among African American adolescents” We appreciate the time taken and helpful comments from the reviewers. We have made the suggested revisions and have addressed the editorial and reviewer comments below:

Editor’s Comment

1- Last part of the introduction. Please, show the aim or hypothesis of this article.
• We thank the Editor for this suggestion. We rearranged the manuscript to align with comments of both the Editor and Reviewers and we now include the hypothesis in the Introduction section of the text.
• Page 5 Last sentence in the Introduction Section. “Therefore we hypothesize that among African American adolescents, perceived neighborhood disorder will be associated negatively with physical activity, which in turn will be associated positively with obesity.”

2- Could you please say which test did you use to test normality?
• We modified the text to include the test for normality as follows: “All variables were examined for normality using the Shapiro-Wilk test, not all of the variables
were normally distributed and nonparametric statistical tests were conducted where appropriate.” Page 9 First Sentence

• We also modified the Data analysis section to include non-parametric tests for descriptives “One-way ANOVA, Kruskal-Wallis tests or Chi-square were conducted to assess significant differences for the dependent and independent variables #<.05, by perceived neighborhood disorder group.” Page 9, Last sentence of the first paragraph.

Reviewer's report
Title: The associations of perceived neighborhood disorder and physical activity with body mass among African American adolescents
Version: 4 Date: 23 November 2012
Reviewer: Joellen Wilbur

Reviewer's report:
Although the authors have addressed many of the issues that arose in the first review some concerns remain.

Major:
1. The conceptual framework is better placed in the background. The framework suggests that perceived neighborhood disorder indirectly affects obesity risk through psychological distress which leads to less PA. These relationships need to be spelled out a little more carefully or simply note that there is no measure of psychological distress (?stress). In the discussion it says that neighborhood disorder was an indirect measure of stress. In this model it does not seem to function that way.

• Thank you for your comments. Initially, these revisions to the manuscript were made based on the suggestions from the previous reviews. We were unsure how to proceed with these conflicting suggestions. However, upon conferring, we decided to move this section back to the Background and remove the limitation of neighborhood disorder as an indirect measure of stress. Please see last paragraph Page 4 - Page 5.

2. The hypotheses now in the methods on page 5 is better placed at the end of the background along with the purpose.

• The hypothesis is now included as the last sentence prior to the Methods heading on page 5 “Therefore we hypothesize that among African American adolescents, perceived neighborhood disorder will be associated negatively with physical activity, which in turn will be associated positively with obesity.”

• We now include a clearly stated purpose in the beginning of the last paragraph
Page 4: “The purpose of the current study is to examine the relationship of perceived neighborhood physical and social disorder with physical activity and obesity status among African American adolescents.”

3. There are two outcome variables being used (BMI percentile and obesity status). This becomes somewhat confusing. It appears these are based on the same data. It probably is best to just use one of these.

• We thank the reviewer for the above suggestions. We agree that the use of BMI percentile and obesity status for the same data is somewhat confusing. We now present results for obesity status only using the IOTF cut-points (as per recommendations by the second reviewer). The changes are reflected in the text and Tables.

4. Measures: for body weight measures clarify the terms BMI percent and obesity status. The term obesity status is not used in the measures section.

• As per the second reviewer’s suggestions, we used the IOTF cut-points and removed all discussion of BMI percentile from the text and tables.

• We revised the manuscript to provide more clarity in this section. We provide more complete information to describe obesity status in the section on Body Mass Index as follows on Page 7 first paragraph: Body Mass Index. Trained research staff collected anthropometric measurements. Adolescent’s heights were measured without shoes using a portable stadiometer (Seca 213) to the nearest 0.1 cm. Weight was measured in light clothing without shoes to the nearest 0.1 kg using a digital scale (Seca 813). Two independent measurements were taken for weight and the average of the two was used to calculate BMI using the formula kg/m^2. Obesity Status: BMI was collapsed into categories of normal weight, overweight or obese using the International Obesity Taskforce estimates which average data from six countries (Brazil, Great Britain, Hong Kong, Netherlands, Singapore and the United States) [28]. The age-sex specific centile curves correspond to adult cut off points of 25 kg/m^2 (overweight) and 30 kg/m^2 (obese) at age 18 years of age.

5A. It would be interesting to be told what the children’s’ perceptions were of physical disorder, social disorder, and prosocial neighborhood environment. Currently it is difficult to tell.

• We thank the reviewer for the suggestion about including the subscales of neighborhood disorder. We revised Table 1 to include subscale values and possible scores. We also revised the Results section to reflect this inclusion.

5b. Also, provide some information on of PA and weight so one knows what their levels are on these variables. Table 1 does not provide the unit for physical activity. Some of these issue could be addressed by providing descriptive statistics on all of these variables in table 1 in a total
• We include a Total column for the Full Sample and then present the results by Quartile of perceived neighborhood disorder. We also modified the variable physical activity to reflect that the values indicate total minutes of physical activity. This information is also included in the methods section as follows, Page 8, last full sentence in Physical Activity measurement: Daily and total counts per minute were summed and averaged as minutes spent in sedentary (1 to 1.5 METs), light (1.5 to 4 METs), moderate (4 to 7 METs) and vigorous (> 7 METs) physical activity. (Page 9: Section Physical Activity).

• We also provide information on height and weight in Table 1 to provide contextual information on obesity status. We provide the values for contextual information, we do not provide an F statistic or p-value for these measures.

6. It appears based on the types of variables that are in table 1 that analyses are primarily Chi squares and not ANOVAs. Please provide F statistics and p values. It isn’t common to provide bivariate analyses for the continuous level and the nominal level of the same variable (e.g. neighborhood disorder).

• For Table 1, we conducted both Chi Squares and ANOVAS (denoted by superscript). The chi-square statistic or F-value, and p-values are presented in Table 1.

We also modified the Data Analysis section to reflect this change. Top of Page 10“One-way ANOVA, Kruskal-Wallis tests or Chi-square were conducted to assess significant differences for the dependent and independent variables <=.05, by perceived neighborhood disorder group.

• We did not conduct ANOVAs for the continuous measure of Neighborhood Disorder, we provide the values for contextual information on the average score by quartile of perceived disorder. No F statistic or p-value is provided for the full measure.

7. See above related to the two outcomes (BMI percent and obesity status). Since these are from the same data it would be best to pick one of these for the meditational analysis. Then provide one figure.

• We made these changes in light of comments mentioned above.

Minor

1. Suggest starting methods with the design.

• We made the suggested changes here.

2. Best to provide the eligibility criteria followed by power analysis and then recruitment efforts. The order is somewhat difficult to follow.

• We revised the order to improve clarity and flow.

3. All data on subjects (eligibility, power, recruitment) could be placed under a
heading “subjects” to set it off. End this section with the number deemed eligible (145) and of those invited to group meeting (not clear if this was a group or individual meeting with parent and child) how many came (116). It is best to put power analysis before recruitment.
• We revised the order to improve clarity and flow and now include a separate section heading, “Subjects”

4. It still isn’t clear how the interested participants contacted the researchers. For example, was there a number on the flyer for them to call the investigators?
• We note in the methods section that a phone number was listed on the flyer. The sentence is stated as follows: “To recruit study participants, we used passive and active recruitment strategies such as flyers (with the contact information of the project coordinator provided on the flyer) and snowball sampling.” Page 6

5. There are sections in the methods related to procedures that might best be grouped together under procedures (e.g. at the meeting informed consent and assent were taken; ordering of instruments, payment).
• We thank the reviewer for this suggestion. We created a section heading “Procedures” and grouped Consenting, payment, and measurements.

6. Start results section with telling about the complete data.
• We have moved this information to the Results section to include information on complete and missing data.

7. Check to see if this should be “mediation model” versus “meditation model” throughout.
• We thank the reviewer for highlighting this error. We conducted a search and changed “meditation model” to the appropriately termed “mediation model.”

8 An additional limitation was the lack of a measure of stress measured with self-report.
• We revised the Limitations Section to include the following “Further, we did not include any self-reported measures stress and did not include biomarkers of stress such as cortisol or inflammation.”

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published
Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.
Declaration of competing interests:
I have no competing interests.

Reviewer’s report
Title: The associations of perceived neighborhood disorder and physical activity with body mass among African American adolescents
Version: 4 Date: 29 November 2012
Reviewer: Augusto Cesar de Moraes
Reviewer’s report:
Major Compulsory Revisions
1) In summary, I suggest that it is introduced, numerical values of the most important results;
We thank the reviewer for this suggestion. We were unsure how to proceed as a previous review suggested removing from the numerical values from the text since they are presented in the figures and tables. We removed the numerical values for this reason. We also checked the most current Journal Publication and numerical values are omitted from the text as well. We think that the current version is more aligned with the Journal format.
2) The authors report that introduced the information about the parameters for calculating sample in discussion. I emphasize that these are character Methodological information therefore must be described in the Methods section. However, such information not found anywhere in the manuscript.
• The reviewer suggested that we incorporate this key information during the first round of reviews and also suggested that we describe the key parameters for sample size calculations. We strongly agreed with the reviewer’s suggestion and included the following information in the previous revision of the manuscript: “The sample size calculations were generated for multivariate linear regression models using the PASS statistical software. The sample size was calculated based on a significance level # = 0.05 with varying levels for beta such that Power (1- Beta) equals 0.90, 0.85, or 0.80. The sample size calculations were adjusted for the multivariate nature of the analyses by including a conservative estimate of the R2 (R2 = 0.10) that is attained when family income, a primary independent variable used in our proposed sampling procedure, is regressed on 10 other independent variables in the regression models. The sample size calculations are strong evidence that the proposed sample size of 120 will have enough power to conduct the multivariate analysis for this study.”
• This information was retained for the current revised manuscript (Page 5 paragraph 1 under the heading Subjects). We are unsure of any additional information pertaining to sample size that the reviewer suggests is lacking.
3) The authors report that introduced the information about the approval of the
ethics committee, however, found no such information anywhere in the manuscript. This information must be entered in Sections Methods.

• The reviewer suggested that we incorporate information about the approval of the ethics committee. We strongly agreed with the reviewer’s suggestion and included the following information in previous versions of the manuscript:

  • “All study materials, methods, and study ethics were approved by the Institutional Review Board for Human Use of the University of Alabama at Birmingham.”

  • This information was retained for the current revision (Page 6, 4th full sentence). We are unsure of any additional information pertaining to study approval and ethics that the reviewer suggests is lacking. Additional information about the purpose of the Institutional Review Board is listed below: The UAB Institutional Review Board for Human Use (IRB) is a committee established under federal regulations for the protection of human subjects in research (45 CFR 46). Its purpose is to help protect the rights and welfare of human participants in research conducted under the auspices of the University of Alabama at Birmingham.


4) I do not agree with the explanation given by the authors to use the cutoffs for diagnoses of obesity proposed by the CDC. These cutoffs are based on percentiles, ie, measures of dispersion of the American sample. The U.S. has the highest prevalences of overweight and obesity in the world, and significantly higher than in other developed or developing countries. Therefore, BMI values are higher, consequently the points are also higher, underestimating the prevalences. And these cutoffs are higher when compared with the cutoff points proposed by Cole et al.

The International Obesity Task Force, suggests that is used cutoff points proposed by Cole et al. for two reasons:

I) statistical methods used for preparation of cut points, more mathematically sophisticated, and more appropriate for the distribution in percentiles;

II) used a sample of several countries, removing the bias of sampling location.

Therefore, the authors insist that using the cutoff points of Cole et al. the classification of overweight and obesity, so that if the article is accepted, it is
more palusível comparison (citation) with other area studies from other countries than the USA.

• We thank the reviewer for this suggestion. For the current version of the manuscript, we include the IOTF cut points and we reran the mediation models. There were no appreciable differences in the mediation models.

We made the following changes in the Measurements section to reflect the new cut-points: “Obesity Status: BMI was collapsed into categories of normal weight, overweight or obese using the International Obesity Taskforce estimates which average data from six countries (Brazil, Great Britain, Hong Kong, Netherlands, Singapore and the United States) [28]. The age-sex specific centile curves correspond to adult cut off points of 25 kg/m² (overweight) and 30 kg/m² (obese) at age 18 years of age.”

• See revised Table 1, Figure 1 & Table 2

Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:
I declare that I have no competing interests