Author's response to reviews

Title: Examining the BMI-mortality relationship using fractional polynomials

Authors:

Edwin S Wong (eswong@uw.edu)
Bruce CM Wang (bw9@uw.edu)
Louis P Garrison (lgarrison@uw.edu)
Rafael C Alfonso (raffonso@uw.edu)
David R Flum (daveflum@uw.edu)
David E Arterburn (arterburn.d@ghc.org)
Sean D Sullivan (sdsull@uw.edu)

Version: 3 Date: 10 December 2011

Author's response to reviews: see over
December 9, 2011

Hayley Henderson, PhD
Assistant Editor
BioMed Central
Floor 6, 236 Gray's Inn Road
London, WC1X 8HL
United Kingdom
hayley.henderson@biomedcentral.com

Dear Dr. Henderson,

We are pleased to submit a second revision to manuscript MS: 6297156475572477, which has been retitled “Examining the BMI-mortality relationship using fractional polynomials.” We are grateful to both reviewers for their clear and constructive suggestions. As requested, we have resubmitted our manuscript as a Microsoft Word document with all changes tracked. Attached to this letter are specific responses to the comments provided by the two reviewers. All page number references in our responses assume the document is set in “Final” model. We have also included a few editorial changes that are also tracked in the submitted document.

We hope that you find our revisions satisfactory and we look forward to your decision.

Sincerely,

Edwin S. Wong
Northwest Center for Outcomes Research in Older Adults
VA Puget Sound Health Care System
1100 Olive Way
Suite 1400
Seattle, WA 98195
Tel: 1-206-277-4703
Fax: 1-206-764-2430
eswong@uw.edu
Response to Reviewers’ Comments

Reviewer 1

Minor Essential Revisions
1. The two comments in the Discussion on the Cox model are inapposite. First, the Cox model assumes proportional hazards, not proportional odds. Second, although technically it is correct to say that the model requires distinct failure times, in practice well known adjustment methods are available in software to cope with tied failure times, so this is not a real limitation in my view.

Thank you for the clarification. We have corrected the statement regarding the assumption of proportional hazards. We have also deleted the sentence stating the requirement of distinct failure times (page 16).

2. Again in the Discussion, the comment, described as a limitation, about possible non-constancy of the mortality rates across the four year study period could easily be checked empirically, and I think it should be. I would be surprised if there was much change over such a short period.

As suspected, mortality rates for each of the four years of the study period were similar. We have added a row in Table 1 indicating deaths per 1000 persons. We have also deleted the non-constancy of mortality rates as a limitation (page 16).

Discretionary revisions

1. Figure 1 (and possibly also figure 5) would be even more informative if some measure of uncertainty of the fitted curves was included, as has been done in figure 3. Probably this could be done only for one curve in each graph. Maybe it would also help to see the binned estimates in the top panels of figure 1.

As suggested, we have added confidence intervals in Figures 1 and 5. We chose not add binned estimates to Figure 1 to avoid overfilling the plot area.

Reviewer 2

Minor Essential Revisions

1. The title of the paper is still misleading. Only to change the order of the words is of course no solution. A proper title would be "Exploring fractional polynomials to estimate the BMI-mortality relationship" or something like that.

We appreciate the suggestion and understand the fact that the previous two titles did not convey the main message of this manuscript. We have changed the title to “Examining the BMI-mortality relationship using fractional polynomials.”

2. The information that the method of fractional polynomials is investigated compared with
common regression models should be given in the Background of the Abstract.

*We have added a sentence to the Background section of the Abstract to state that the fractional polynomials method was compared against other commonly used regression models.*

3. Please give a short description of the "alternative models" in the Methods section of the Abstract.

*We have added a sentence in the Methods section of the Abstract to state that the best fractional polynomials model was compared against the model that includes linear and quadratic BMI terms and the model that categorizes BMI into standard weight status categories. We have also added a sentence at the end of the Introduction indicating the comparisons between the fractional polynomial model and other alternative models.*

4. Page 14, lines 6-7: Please correct the formal errors in the references.

*We apologize for the formatting errors with the references. We believe the problem originated from the fact that our revisions were tracked in Microsoft Word and were not finalized. To our knowledge the extraneous references have been deleted.*