Reviewer's report

Title: Periodontal disease, chronic kidney disease and mortality: Results from the Third National Health and Nutrition Examination Survey

Version: 2 Date: 26 March 2015

Reviewer: Elani Streja

Reviewer's report:

Major Compulsory Revisions

Since you are evaluating the joint effect of two exposures, it is essential to add tests for additivity and multiplicativity. This would require examination of association of each exposure (CKD and periodontal disease) for marginal estimates as well.

Minor Essential Revisions

- Please check use of abbreviations, varies back and forth between abbreviation and full word(s) such as BMI, CVD, etc. Make sure all abbreviations are spelled out at first use and then consistently used throughout the manuscript.

- Please describe in the methods section the statistical tests used for p-values in table 1. Please do not refer to table 1 as a bivariate analyses. Please explain if differences in lab measurements are also clinically different as well as statistically different. Page 7, line 17 use these "differences" were not statistically significant in place of "associations"

- Please revise Background Paragraph: indicated CKD stages 1-5 affects approximately 26 million. Add "is" for It is well established on line 3, on line 4 mortality "compared to" the general population in place on "than", and line 6 replace "this" population with "the CKD" population.

- A figure and potentially a cross table to evaluate additivity and multiplicativity would be helpful in visualizing and understanding results.

- Authors indicated a possible causal pathway regarding inflammation. I believe that this can be developed a bit more regarding what is known about the two exposures individually and the CVD and non-CVD mortality outcomes. Also please comment on the differing results for the two outcomes studied.

- What do the authors conclude regarding a non-significant test for interaction, but still write in conclusions "This study provides the first evidence that periodontal disease increases the risk of mortality in individuals with CKD"?

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests