Reviewer's report

Title: Implications of standardization of serum 25-hydroxyvitamin D data for the evaluation of vitamin D status in Germany, including a temporal analysis

Version: 0 Date: 25 Apr 2018

Reviewer: Baki Billah

Reviewer's report:

The paper is well written which addressed the importance of implementing the Vitamin D Standardization Program (VDSP) in Germany. The effect of the VDSP was evaluated on three national level studies namely, GNHIES98, DEGS1 and KiGGS. The analysis results were presented for both original and standardized serum 25(OH)D levels. The DEGS1 and KiGGS study results from standardized serum 25(OH)D showed that approximately 15% adults and 12% of children are vitamin D deficient in Germany. This equals to 11 million people in the country are vitamin D deficient. However, a comparison of prevalence and total between original and standardized serum 25(OH)D would be useful to evaluate the overall effect of standardization. I have no further major comments, but have a few minor comments.

Minor comments:
- Tables 4-6 presented the mean serum 25(OH)D along with confidence interval for original and standardized data. My concern is whether these data follows normality (at least approximately) to consider mean as the summary statistic.
- From Tables 4-6, it is not clear what the numbers within the parenthesis represent for. I assume it is 95 confidence interval, but this needs to be clarified.
- Table 3: Again, does the data follows normal distribution. If yes, should report standard deviation along with mean.
- Table 2: "X1^2", may be the square sign should be deleted.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
I am able to assess the statistics

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