Reviewer’s report

Title: ASSOCIATION BETWEEN SERUM 25-HIDROXYVITAMIN D CONCENTRATIONS AND ULTRAVIOLET INDEX IN PORTUGUESE OLDER ADULTS: A CROSS-SECTIONAL STUDY

Version: 0 Date: 28 Jun 2017

Reviewer: Xuan Wang

Reviewer's report:

P12 line 12, it is claimed that mUVI has the highest effect because of biggest sbeta? The reviewer question this statement since the value of beta coefficients depends on the unit of explanatory variable, i.e. if I change the age's unit from year to month, it will be associated with a sbeta with higher magnitude.

P13 line 6, remove 'mUVI', typo? P13, line 13-14: 1 unit of mUVI increase associated with 1.1 nmol/L increase of 25(OH)D, according to both model fitting (Dec-Jun and Apr-Jun)?

The authors mentioned similar studies between UVI and 25(OH)D in other age groups in Europe, how about their conclusions, similar reversed coefficients on mUVI between the two seasons?

Figure 1 is with relatively low resolution, would the authors please improve the quality of the plot? Figure 1 reveals a two-month time lag between mUVI and 25(OH)D, is there any published data available to show a 12-month mUVI vs 25(OH)D plot, in order to investigate the time lag behavior?

In both Table 2 and Table 3, alcohol consumption has a positive effect on 25(OH)D, how shall we interpret these results? Maybe alcohol consumption is confounded with other factors such as household income or residence?

In regard to the stratified stepwise linear regression, why not considering step-wise linear regression with an interaction term between mUVI and seasons (recode Dec-Mar, Mar-June into two season)?

The authors mentioned that mUVI in winter-spring season may not be high enough to trigger VD synthesis, then how much credibility does it have for the linear coefficient of the continuous mUVI value, especially when the winter-spring season data is involved? Would it be better to do model fitting with categorical mUVI levels?
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.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
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Yes

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