

Title: Association between serum 25-hydroxyvitamin D and prostate cancer in middle-aged and elderly Americans: A national population-based analysis of NHANES 2001–2018

Version: 2 Date: 14 May 2025

Reviewer's report:

Thank you for the thoughtful consideration of the feedback suggested by the previous reviewers and editor. The revised manuscript was clear, and the integrated changes ensured that all decisions were contextualized and easy to follow. Following review, minor changes are suggested to improve the flow:

Introduction

- Clear and integrated changes contextualize the previous literature on the topic.

Methods

- Line 108: Please specify that PCa diagnosis was self-reported.
- Line 116: Please clarify the age group categories - 40 -60, # 60
- Line 125: Were CVD conditions self-reported? If so, please state
- The changes integrated into this section significantly improve the robustness of the methodology and clarity of the section.

Results

- Line 183: Separate into two sentences and please contextualize the model 1 finding before presenting the results for model 2,3, and 4. This can be done using the same language found on Line 186.
- Line 190: Please clarify that the p-trend analysis across clinical cutpoints is significant, suggesting evidence for a dose-response relationship.
- Table 3: Please provide the n in the table title
- Please move Table 3, Figure 2 & 3 down with the other tables and figures. It is challenging to read when not all tables and figures are together.
- Line 250: Specify that this sensitivity analysis was conducted in all age groups, as the previous analysis was in only respondents older than 60.
- Line 254: Combine this paragraph with the previous one as they are discussing the same sensitivity analysis subgroup.
- Line 258: Please add commas after regression and methodology and provide the assay groups in ()

Discussion

- Integrated changes are thoughtful and provide a robust contextualization of the study findings in relationship to the broader field at large.