Author’s response to reviews

Title: Vitamin D and assisted reproductive treatment outcome: A prospective cohort study

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Author’s response to reviews:

Dear Editor,

Re: Vitamin D and assisted reproductive treatment outcome: A prospective cohort study

Thank you very much for considering our manuscript for publication in BMC Open Reproductive Health and for the suggested revisions from the reviewers. Please find below our response to all of the comments.

We are really grateful for your support with this work, which has the scope of influencing clinical decision making in the diagnosis and treatment of women with vitamin D deficiency and insufficiency undergoing assisted reproductive treatment.

I wish to thank you in advance for your kind consideration.

With kind regards,
Yours sincerely,

Ioannis Gallos

Reviewer #1: In general the paper reads well and merits publication. However, there are a few minor points that should be dealt with before its publication.

We thank the reviewer for their comments and have made the suggested changes detailed below.

1. Reproductive outcomes or reproductive treatment outcomes. Please be clear and consistent throughout the manuscript.

Perhaps it might be better to define this somewhere in the method section.

We have ensured the consistent use of the term ‘reproductive treatment outcomes’ throughout the manuscript. There is already a section within the methods that describes the outcome measures at line 180 of the tracked manuscript.

2. The main problem with this paper is the fact that there is no significant association between vitamin D consumption and reproductive outcomes after adjustment for prognostic factors. Thus this should be clearly indicated. At present the Conclusion in the Abstract and in the text are misleading.

We thank the reviewer for this comment and have changed the conclusion within the abstract and also in the main manuscript to reflect the loss of statistical significance when adjusting for prognostic factors.

3. Using references for Conclusion is odd and this should be revised.

We thank the reviewer for this comment and we have now removed the references in the conclusion and changed the text within the conclusion section.

Reviewer #2: Dear Authors, Thanks. I enjoyed reading your manuscript and would like to suggest some revisions.

We thank the reviewer for the encouraging comment.

1- I could not follow the total number of women in-study in Figure 1 and the result section. Numbers and arrows in the lower part of "participants flow chart" is not clear to me.
We thank the reviewer for the comment but having reviewed Figure 1. Participant flow chart – we think that the flow chart is simple to follow allied with the text in the results section. Therefore apart from spacing out the boxes on the flow chart we have not made any additional changes.

2-Expected to see the total number of participants in Figure 3 and 4 and tables

We thank the reviewer for their comment. We have now added the numbers on to the bar charts in figures 3 and 4 and also added the total numbers to table 2. There are already total numbers on table 1.

3-Did you add season into your model? You discussed its effect in different places, but it has not been listed in the footnote of table 2.

Season was not added into the multivariate model for adjustment as it is not known to be an important prognostic factor in IVF treatment outcome. There have been associations with season and natural conception rates and so we have clarified at line 349 on the tracked manuscript.

4-For main outcome of interest, what’s your definition of a "live-birth"? What about other confounding elements for "live birth" such as number of follow-up visits, taking minerals ….?

We thank the reviewer for this comment. We have now defined live birth at line 181 on the tracked manuscript. We did not follow up the women after their assisted reproductive treatments to collect data on follow up visits and whether they took vitamin supplements after achieving pregnancy.