Author's response to reviews

Title: Vegetarian diets are associated with healthy mood states: a cross-sectional study in Seventh Day Adventist adults

Authors:

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Author's response to reviews: see over
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Dr. Nehme Gabriel
Editor-in-Chief
Nutrition Journal

Dear Dr. Gabriel:

Please accept submission of our revised manuscript entitled, “Vegetarian diets are associated with healthy mood states: a cross-sectional study in Seventh Day Adventist adults”. As recommended by Referee 1, we have reformatted the manuscript into a full Research report in order to properly address the revisions.

The recommendations requested by Referee 1 and our responses (bolded) are as follows:

Reviewer’s report:
This paper on mood in vegetarian versus omnivorous diets has merit; however, this paper requires significant revisions before it is suitable for publication. This paper has been submitted in the form of a short report, but due to the restrictive word limit this has resulted in omission of important information. It is recommended that this paper be resubmitted in the form of a full paper so the following comments can be addressed sufficiently (Major Compulsory Revisions). It is also recommended that the authors review recent publication reporting POMS and DASS data, to incorporate any relevant discussion in the methods, results and discussion.

Response: We have decided to resubmit our manuscript in the form of a full paper in order to satisfactorily address the revisions. These revisions have been very helpful and we think the paper has been improved.

Major Compulsory Revisions

Methods page 3
5. More information needed on FFQ eg no of items, was this a quantitative FFQ? How was quantity of omega-3 derived from the FFQ.

Response: We have expanded the description of the FFQ in the Methods section on pg 4, 2nd paragraph, and expanded the description of the dietary analysis in the Results section on pg 8, 1st paragraph.

Results page 6
16. The authors have reported POMS adjusted for age and physical activity. Can the authors cite other published literature for this type of adjustment or can the authors justify this adjustment. It is typical to report unadjusted POMS.

Response: We have revised our analysis to report unadjusted POMS and DASS analysis in the Results on pg 9, 2nd and 3rd paragraphs. Since our analysis showed that age, gender, and physical activity were potential confounders of mood, we reported the adjusted data as well.

Paragraph 3- these results need to be in a table for greater clarity. P-value of 0.000 needs to be replaced with p<0.0001

Response: These results are included in Table 1. We have revised the p-values with p<0.0001.

Discussion page 7
17. The discussion did not provide enough detail on the findings from this study. There needs to be a comparison of POMS unadjusted data to other similar population groups. More discussion on the limitations eg sample studied Seventh Day Adventists.

Response: We have added more text to our discussion regarding these findings on pg 10, and regarding our study population on the bottom of pg 11 and top of pg 12.

Minor essential revisions

Abstract page 2.
1. The statement “female Veg participants reported significantly less mood disturbance than female OMN” doesn’t match the data presented.

Response: The difference in female scores on the POMS test was referred to in the last sentence of the Results on p 10. We have removed the statement about the female scores in the Abstract.

2. “The vegetarian diet profile does not appear to increase mood variability” The authors did not assess mood variability. This concluding statement needs to be rephrased to reflect the findings in this study.

Response: The phrase, “…increase mood variability…”, was, indeed, not technically correct; the phrase has been changed to “…adversely affect mood…” in the Conclusion of the Abstract at the top of pg 3.

The abstract has been revised to reflect the unadjusted psychometric scores.
Introduction, page 3
3. “report more mood variability” needs to be replaced with worse mood.

Response: The objective sentence at the bottom of pg 3 was rewritten to use more neutral language: “The objective of this cross-sectional study was to compare the mood of vegetarians who never eat fish with the mood of their healthy omnivorous counterparts.”

Methods page 3
4. Need to include state and country where study was conducted.

Response: The sentence referring to the location of the study at the beginning of Methods at the top of pg 4 now reads: “Volunteers from Seventh Day Adventist (SDA) communities in the Phoenix, Arizona and Santa Barbara, California metropolitan areas in the United States…”

5. More information needed on FFQ eg no of items, was this a quantitative FFQ? How was quantity of omega-3 derived from the FFQ.

Response: We have expanded the description of the FFQ in the Methods section on pg 4, 2nd paragraph, and expanded the description of the dietary analysis in the Results section on pg 8, 1st paragraph.

6. More information needed on the DASS and POMS eg what is the scale of responses. For the POMS eg, “An abbreviated thirty-seven-item version of the Profile of Mood States (POMS)(30) was used to assess participants’ mood state. The thirty-seven-item POMS is designed to assess current and changes in mood states, and has been validated(31). Each week, participants rated their mood state on five-point Likert scales (0 ¼ not at all, 4 ¼ extremely) which best described how they had been feeling during the past week.” “Scores for each person on each of the thirty-seven items of POMS were averaged across the 13 weeks of the study and then a principal components analysis with oblique rotation was performed(34). Six factors had eigenvalues greater than 1, but several items were loaded with similar strength across more than one factor, or loaded below 0.5. Seven items were subsequently dropped from analyses. A principal components analysis with oblique rotation of the remaining thirty items resulted in simple structure. The thirty items explained 85•2% of the variance in mood. The following six factors emerged: Anger (furious, bitter, angry, annoyed, resentful, grouchy, peeved) (range 0–28); Confusion (unable to concentrate, forgetful, confused) (range 0–12); Depression (worthless, hopeless, helpless) (range 0–12); Fatigue (exhausted, fatigued, worn out, bushed, weary) (range 0–20); Tension (anxious, nervous, uneasy, on edge, tense, restless) (range 0–24); and Vigour (lively, energetic, vigorous, full of pep, active, cheerful) (range 0–24). In addition, the POMS global score (total mood disturbance) was used to obtain an overall measure of mood, and was calculated from the raw scores by
subtracting the vigour score from the sum of the negative measures of mood and adding a constant of 100 to eliminate negative values (range 100–176)(4).” Need to include the original ref for the POMS. Shacham S (1983) A shortened version of the Profile of Mood States. J Pers Assess 47, 305–306.

Response: We have more fully described both scales in Methods on pg 5 and pg 6, first paragraph. We used the regular version, not the shortened version, of the POMS.

Results page 5
7. For the 8 participants excluded, were these from the VEG or OMN group?

Response: One participant from the OMN group and four from the VEG group were removed before mood score analysis as described on pg 7, first paragraph; three additional participants from the VEG group were removed before dietary analysis as described on pg 8, first paragraph.

8. Any difference between those who participated and those who were excluded? How were extreme dietary PUFA intakes defined?

Response: Yes, the eight participants who were excluded before analysis either did not meet the study criteria which was stated in the first paragraph of p 4: “Individuals were excluded if pregnant or lactating, diagnosed with chronic disease affecting mental state, or regular users of substances known to influence mood”; or if values reported, either mood scores or dietary fatty acid intakes, were found to be extreme outliers in analysis, defined as >3SD from the mean.

9. The authors refer to “characteristics at baseline” was there another phase to this study?

Response: Thank you for catching that erroneous phrase; no, we were not referring to another phase of this study. The words, “at baseline” in the first paragraph of Results on pg 7 were removed.

10. “which was not correlated with total mood scores” this statement is confusing. 3rd paragraph- these results are duplicated in the table.

Response: We reworded this sentence referring to BMI in the first paragraph of Results on pg 7. We also omitted the unnecessary duplication of participant characteristics in Table 1, thereby displaying only fatty acid intakes and changing the Table title.

11. There was no reference to packed cell volume in the methods.
Response: This information was inadvertently left out. We have added a paragraph for this information in Methods on pg 6, 2nd paragraph.

12. How was education level determined?

Response: A categorical education level question was included in the health history questionnaire as stated in Methods on pg 4, 2nd paragraph. Five categories (less than high school, high school grad or GED, some college or professional certificate, bachelor’s degree, post-graduate degree) were collapsed into two categories for analysis purposes: no college, some college, as stated on pg 7, 2nd paragraph.

13. Positive correlation between DASS and POMS scores- there needs to be some interpretation of results. The authors need to report unadjusted POMS scores (global score and 6 mood variables) and unadjusted DASS scores.

Response: In the Discussion on pg 10, 1st paragraph, we have provided some interpretation regarding the positively correlated DASS and POMS scores, and have also reported unadjusted global and subscale scores in Results on pg 9, 2nd and 3rd paragraphs.

Results page 6
14. Paragraph 1- “Dietary intakes of EPA, DHA and AA were directly related” was it a positive or negative relationship?

Response: We revised this statement to read that they were ‘positively related’ at the bottom of pg 8, top of pg 9.

15. Paragraph 2- all these results are repeated in Figure 1.

Response: We have removed the unnecessary data from Figure 1.

There were no revisions recommended by Referee 2. The revisions requested by Referee 1 were helpful and we think the paper is stronger. We thank you again for considering our manuscript for publication.

Sincerely,

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/blb