Reviewer’s report

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

**Version:** 3  **Date:** 28 January 2010

**Reviewer:** Susan Torres

**Reviewer’s report:**

**MAJOR REVISIONS**

My main comment for this second revision is that the results section needs to be simplified. The current format of the results is difficult to follow, and the key findings of this study are lost in the detail. Data presented in the text should be presented in tables and the text simplified to highlight the key findings. I suggest the following:

Table 1- baseline characteristics (OMN vs VEG)
Table 2- fatty acid intake (OMN vs VEG)
Tables 3- DASS (total scores and subscales) and POMS (total scores and subscales) OMN vs VEG.
Figure 1. DASS and POMS, split by gender, OMN vs VEG.
Other data analysis can be included in the text to supplement the key findings in the tables and figure eg correlations.

**MINOR REVISIONS**

**PAPER COMMENTS**

Abstract, page 2 The methods section should state the study design (cross sectional) and number of participants.

Participants completed a quantitative food frequency questionnaire, Depression Anxiety Stress (DASS) and Profile of Mood States (POMS) questionnaires. (Grammatical).

Second line, researched should be research.

Results (first three lines)- p values should be included for the data eg EPA, DHA.

Depression Anxiety Stress Scale

Background , page 3 Comma after cytokine [8] and vegetarian diets [3-5]

Methods, page 4, paragraph 1 Should substances be replaced with medications? No comma after non-vegetarians.

Authors need to be consistent with terminology for describing POMS and DASS
Methods, page 5, paragraph 1

Methods, page 5, paragraph 2 and page 6, paragraph 1. It is not clear what the range is for the DASS. Did the authors report DASS including the 3 negative affective states (depression, anxiety, stress) or have the individual negative affective states been reported. “Normative scores for depression are 0-9” Is this correct? In the abstract it refers to 8.32 vs 17.52. 17.52 is out of the range of 0-9. The range for the DASS, and the subscales of DASS, needs to be clearly stated in the methods and it needs to correspond to data presented in the results.

The authors need to state the range for total POMS and the 6 mood domains. How were total POMS score calculated? I refer the authors to Nieman (2000) Journal of Psychosomatic Medicine 48:23-29 for an example of how to calculate total mood score.

Results, page 7, paragraph Body mass index needs to BMI.

Results, page 7, paragraph 1

2nd paragraph “Five participants of our survey population were removed from the data set prior to analysis” and comment 8 from reviewers report. The authors need to compare the 5 subjects who were excluded to subjects who remained in the study eg compare age and BMI and report these findings in the text.

“psychometric scores”- does this refer to the POMS or DASS.

Mean population characteristic including mood scores did not differ by location except with regards to BMI. The way the sentence is written implies that there was a difference in BMI with regards to location. The p value reported is P=0.05. A p-value <0.05 would imply there was a difference in BMI according to location. This sentence needs to be re-written to state there was no difference in BMI.

41+/-1.4. Inconsistency with number of decimal places. Please check remainder of document. The second paragraph should have the results presented in a table so the reader can clearly see the difference between OMN and VEG participants. This paragraph could be reduced to summarise the key findings.

Results, page 8, 1st paragraph
2nd paragraph

3rd paragraph This should be moved to the methods. In the last sentence it refers to three participants being removed from the data due to extreme dietary polyunsaturated fatty acid intakes.

These participants need to be included with the five participants who were excluded (refer to results, page 7, paragraph 1). The authors need to be clear about who was removed from the data, the reason they were removed and the number of subjects that were included in the final analysis.

These results are duplicated in Table 1. This paragraph needs to be shortened to highlight the main findings.

“There were no nutrient intake differences by gender”. These results are not presented. Authors should end sentence with (data not shown).

Do the correlations refer to the total sample or for the OMN or VEG group? The authors need to be clear in the results section if the analysis relates to the entire sample or separate analyses for the Veg and OMN groups.

Results, page 8 and 9

Mood scores. The authors could include in the text a descriptive finding in the text of the key results eg “Dietary intakes of EPA, DHA and AA were positively related to the total mean POMS and DASS”, indicating that those with low intakes of EPA, DHA and AA had better mood. This will assist the reader with understanding the key findings from this study and build on any text in the discussion.

The DASS and POMS scores for VEG versus OMN participants should be presented in a separate table. This table could also include the subscales eg DASS-D and POMS-T, and the range for DASS, POMS and all the subscales. These results should be presented before any correlations between DASS/POMS and fatty acid intakes.

I suspect there may be an error in how total mood was calculated. The authors report values of 0.1 and 15.3, these are well below published values of 50-100. This needs to be checked before the authors make any comparisons with their data to other published studies.
r values need to be included in the text.

“Mean total POMS scores of VEG participants were also significantly lower than OMN”, indicating better mood in the VEG participants (Table).

“with PA level explaining about 20% of the variance “. These data are not presented in Figure 1. This should be in a separate sentence.

Results The methods referred to the use of spearmans correlations. It does not appear that any correlations were conducted using Spearman’s. Results are usually stated using rho to differentiate between Pearsons which uses r.

Discussion, page 10, paragraph 1. Second sentence. The authors refer to POMS data (ref 25- were these omnivores or vegetarians), but comment on the difference between VEG and OMN. The authors need to compares POMS data from the present study with other published literature reporting POMS in smellier population groups. Were the POMS scores of VEG and OMN higher, lower or the same as other population groups?

Third sentence- refer to comment above.

Last two sentences- unclear what the authors are stating.

Discussion, page 10, paragraph 2. Last sentence- unclear statement.

The section requires a clearer discussion comparing the findings from this study and other published studies.

Table 1 Title- Fatty acid intakes of participants by diet group (per gram). Per gram of what? Should this just be g?