Reviewer's report

Title: High quality dietary patterns beyond the Mediterranean Diet and depression in the SUN Project.

Version: 1 Date: 8 May 2015

Reviewer: Allison Hodge

Reviewer's report:

Diet patterns and depression in the SUN Study

This is an interesting study looking prospectively at different scores of dietary quality (MDS, PDP and AHEI-2-10) and depression. This area is currently attracting a lot of interest but this may be the first study to compare different diet quality scores and specifically assess non-linear relationships. The study includes a large number of cases of depression.

Major compulsory revisions

1. Rather than ‘high quality dietary patterns’ the measures are ‘diet quality scores’. Clearly the scores can indicate a ‘poor quality’ diet as well as a ‘good quality’ diet. This should be addressed throughout, including the title.

2. Include justification for choosing the three diet quality indices used.

3. More explanation of the use of residuals from regression of PDP and AHEI on MDS needed. How should the results be interpreted and what is the relevance of this?

4. It is not clear that vitamin D is relevant here as endogenous synthesis is important and sun exposure may have an impact on risk of depression independent of vitamin D level, for example.


6. On page 18 studies of single nutrients are discussed but the current study does not report on nutrient intakes. Even if only as an appendix perhaps you could estimate nutrients by extremes of the diet quality scores so you could interpret your findings in relation to available nutrient specific data. Also in the discussion make sure differences between cross-sectional and prospective associations are clarified.

Minor essential revisions

1. In abstract results only PDP and AHEI are shown. Should also provide the HR for MDS which was apparently also inversely associated with depression according to the conclusion.
2. At the top of page 4 the sentence starting ‘However, an emerging field of research…’ needs something added to complete it.

3. This is an area where reverse causality could be particularly important, especially in cross-sectional data, so in the introduction please be clear if referring to cross-sectional or prospective associations.

4. At the top of page 11, ‘Other confounding factors such as marital status…’ not include in final models’. Explain why not included.

5. Bottom of page 14-page 15. This is not results and should be deleted from here.

6. Throughout the manuscript are some odd expressions that could be improved, for example, on page 18 replace ‘A scarce number of studies…’ with ‘A few studies…’.

7. It is not appropriate to compare ‘threshold level of adherence’ for the different diet quality scores as the methods of scoring are so different. It appears that for both PDP and AHEI the threshold is at 60-70% of maximum score so they are similar, where for MDS the threshold is below 50% of max score.

8. Not clear why two sections re specific nutrients in the discussion on page 18 and then page 20.

9. Are the associations between diet and depression the same if you look just at baseline diet as when the two sets of dietary data are used? This is important to understand as diet measured near diagnosis may be modified by depression and be due to reverse causality not because it is a prospective risk factor for depression.

10. While the idea of micro/macronutrient deficits being associated with depression risk is a logical interpretation of the results, ie once the deficit is overcome there is no additional benefit of more of something; it is important to consider the converse association relating to eating less of the foods that score negatively in each diet quality index. For example reducing sugar sweetened beverages or meat might have an impact up to a point but after that reducing further is not of benefit.

11. Given that you have chosen to look at dietary patterns as risk factors for depression the focus on individual nutrients is odd. Even the conclusion is based on identifying specific micronutrients that might be important. The whole idea of looking at dietary patterns or overall diet is that individual nutrients on their own might have only weak associations with outcomes where a dietary pattern providing a wide range of nutrients could have a stronger association; and that it is difficult to disentangle the association of single nutrients from other nutrients and unknown compounds that are consumed together in different foods.

12. Does the journal have a limit of references include as there are very many and at least one that could be added.

13. Patterns of dietary intake and psychological distress in older Australians: benefits not just from a Mediterranean diet.


16. Table 1, ‘quantile’ not ‘cauntile’.

17. Table 2. Change table title to ‘diet quality scores’ rather than ‘high quality diet patterns’ (Also Table 3). Is the percentage of post menopause in the table just within women? Change ‘Unemployment’ to ‘Unemployed’. Fix ‘Dyslipidemia’. Add ‘score’ after the names of diet, eg Mediterranean Diet Score. Don’t need for AHEI and names includes the word ‘Index’.

18. Figure 1. Fix the x-axes title by Including a space after ‘Average’ and adding ‘diet score’, eg A) Average Mediterranean Diet Score on x-axis; for AHEI just get add space.

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare I have no competing interests