Reviewer's report

Title: Association between adherence to MIND diet and general and abdominal obesity: a crosssectional study

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Reviewer: Stephanie Cowan

Reviewer's report:

OVERALL

This is an interesting topic, as the MIND diet is a novel dietary approach that warrants further exploration. Given that obesity, specifically central obesity, is a risk factor for chronic metabolic diseases such as cardiovascular disease and diabetes, this study provides insights and exploration in this area.

There are a lot of spelling and grammatical errors. Some of your sentences are difficult to understand, though I appreciate this may be because English is not your first language. See examples below:

Lines 34 - 35: "The age-adjusted prevalence of overweight or obesity is estimated to be 42.8% in men and 57.0% in women in Iran (3)."

Lines 36 - 39: "Adherence to healthy dietary patterns including the DASH diet (Dietary Approaches to Stop Hypertension) as well as the Mediterranean dietary pattern (MD) were significantly associated with less weight and lower prevalence of obesity (4, 5)."

Lines 42 - 44:

➤ There are many missing commas

➤ This is also a poor explanation of the MIND diet. Specifically, which components are optimised (e.g. nuts, extra virgin olive oil) and which are avoided (e.g. red meat, pastries)? As you are introducing the diet you need to be clearer and more specific in regards to key components of this dietary pattern

Lines 55 - 57:

➤ This sentence needs to be reworded (see example below)

➤ "A study in 52 countries from 8 geographical regions revealed that adult women in the Middle East had the highest rate of abdominal obesity."
Lines 167 - 168: "Overall, 9.5% of study participants were generally obese (men: 9.2 and women: 9.7%) and 24.4% had abdominal obesity (men: 11.2 and women: 32.7%)"

Line 196: "Crude"

Line 217: Should be influence or modulate, not both.

INTRODUCTION

While your aims are clear, I think that you need to better address the purpose of your study. Specifically, see lines 50 - 51:

➔ "DASH and MD are parts of a healthy diet and none of them consider the whole dietary components." I had to read this sentence multiple times to understand the message you were trying to convey. Also, I don't know if this statement is entirely true. It is my understanding that the DASH diet specifies limits for confectionery foods and processed foods high in sodium. In your introduction I would encourage you to explain further (and more clearly) why combining these two diets is beneficial (e.g. their recommendations complement one another).

There are statements made in your introduction that are not supported by available evidence. For example, line 48 requires sufficient citations. I also feel you could provide a better overview of available literature investigating the effects of the DASH and MD on obesity and more broadly chronic disease. For example, in lines 36 - 39, in what populations were the cited studies carried out and for how long were the study diets followed (if applicable). Don't just describe the literature - appraise it so that it is clear where the gaps lie and why your research is important.

METHODS

You have described your methods of analyse clearly and succinctly. Specifically your description of dietary data collection and calculation of MIND diet scores is adequate to allow for replication.

Can you please explain the method of calculating the sample size for your study. The original paper for the Study on the Epidemiology of Psychological Alimentary Health and Nutrition (SEPAHAN) (reference number 13) describes power calculations relevant to functional gastrointestinal disorders and psychological distress, which is not relevant to your paper.

For lines 78 - 79 please provide a brief rationale (e.g. 1 sentence) as to why energy intakes outside the range of 800 - 4200 kcal/day were excluded.

For lines 158 - 159 please justify why fruit, refined grains, dairy and total fat intake were controlled for in the second logistic regression model. If these dietary components are not relevant to calculation of MIND scores then state it.
RESULTS

Overall your results flow logically from the statistical analysis described in the methods and they also directly answer your research questions.

DISCUSSION

You have done a much better job at relating your research to previous work in this field in the discussion than in the introduction. I think it would be worth using some of the detail provided in the discussion in the introduction to better emphasise the gap in the literature.

You haven't provided any practical implications for future research. For example, given the exploration provided in your discussion, if the consumption of a range of dairy products, such as fermented yogurts, has been shown to decrease adiposity more than weight loss diets without dairy, should the MIND diet be adapted accordingly? Similarly, if the mind diet only specifies berries and does not include all of the fruits emphasise by DASH and MD, should the MIND diet be broadened to include a range of fruits? Or perhaps it could be concluded that the MIND diet may only apply to cognitive decline and cognitive impairment but not traditional chronic disease risk factors. Certainly the implications for your research need to be explored more thoroughly.

In lines 212 - 215 you discuss that the MIND diet is unique to the MD and DASH diets because of its inclusion of legumes which "might influence body weight because of their high content of fibre". However, in lines 235 - 238 you conclude that your results may contradict previous research on the MD and DASH diets because it is lower in fibre. These two concepts appear to contradict one another and hence you need to make your argument clearer.

It is very interesting that women in the third tertile for MIND scores had lower odds of general and central obesity, while men had greater odds. In your introduction you briefly state that women in the middle east have the highest rates of abdominal obesity out of 52 countries for both sexes. Hence, even though you didn't find statistical significance I still think that your observations are interesting and can be discussed further.

CONCLUSION

Your conclusion is too brief and needs to be rounded out more. Specifically, re-state what your study adds to the knowledge in the subject area.

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