Reviewer’s report
Title: Empirically derived dietary patterns and constipation among a middle-aged population from China, 2016-2018

Version: 0  Date: 29 Sep 2019

Reviewer: Enrique Rey

Reviewer's report:

I appreciate the opportunity to review the manuscript entitled "Empirically derived dietary patterns and functional constipation among a middle-aged population from China, 2016-2018". The manuscript describes an interesting epidemiological study looking for association between constipation and dietary patterns in southern China. It is a well design study; manuscript is well written. Nonetheless, there are several concerns that authors should clarify:

Major concerns

1. Symptoms. For defining constipation, subject's symptoms should have been collected. How was the information about symptoms collected?

2. Constipation: it is named as functional constipation all along the study. In my mind, functional constipation is a diagnosis that required a medical evaluation and diagnosis. Just "Constipation" seems to be a better descriptor for an epi study.

3. Confounding variables:
   a. Fiber. It is well known that high fiber intake is inversely associated with constipation. Apparently, fiber intake could be estimated with the data collected in the study. Information on the amount of fiber in each diet would be interesting. Fiber intake should be included as a potential confounding factor in multivariate models to clarify whether fiber intake or dietary pattern is responsible of the association
   b. Medication. One of the confounding variables in multivariate models is usage of medication. It is not described in methods section how information about medication was collected. Moreover, drug usage is labelled as yes/no, although some medications may be associated with diarrhea (i.e metformin) while others with constipation (i.e anticholinergic drugs), so the simple adjustment by medication used is not very meaningful.
c. It is not reported the usage of traditional Chinese medicines or remedies which may potentially accelerate bowel transit. It may be speculated that subjects taking a traditional dietary pattern are also prone to use these remedies.

4. Traditional Chinese southern diet is described by the main food included, but I wonder if traditional way cooking includes any flavoring ingredient or spicy that may influence bowel transit.

Minor concerns

Although described elsewhere, I would suggest detailing that sample were obtained by stratified cluster random-sampling method in the methods section.

Association of constipation with hypertension. Hypertension is associated with constipation in the whole sample. When looking at figures in table 4, it seems that overall prevalence of hypertension in the Q4 sample of traditional Chinese diet is quantitative higher than in the other two Q4 samples of diet. Some clarification of the association of constipation, hypertension and diet should be interesting for the reader

Level of interest

Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

Quality of written English

Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests

Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

No competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal