Reviewer’s report

Title: Diet quality and carotid atherosclerosis in intermediate cardiovascular risk individuals

Version: 1 Date: 15 Feb 2017

Reviewer: Lauren Blekkenhorst

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NUTJ-D-17-00002R1 Manuscript "Quality diet and carotid atherosclerosis in intermediate cardiovascular risk individuals" is an interesting cross sectional study investigating the relationship between diet quality and subclinical atherosclerosis in a Spanish population at intermediate risk of cardiovascular disease. The authors concluded there were no associations found between diet quality and subclinical atherosclerosis in this population.

General comments:

The quality of English language needs improving and the manuscript needs to be corrected to be written in past tense. The study reports findings in a Spanish population. This could be stated in the title or abstract.

Diet quality was assessed using a validated short diet quality screener (SDQS) questionnaire and has been referenced. However, the SDQS could be explained in more depth within the methods section as it is not entirely clear what aspects of the diet were used in the diet quality index without looking back to the reference. As the diet quality index is a major component of this manuscript I believe elaborating on this in the methods section would benefit the reader. Furthermore, subclinical atherosclerosis was measured in the common carotid artery. This is not stated throughout the manuscript. Including the word "common" throughout would make this more clear. Lastly, there is no adjustments for confounding variables other than age and energy. I would suggest constructing a model 3 with further adjustments such as hypertension, diabetes, dyslipidaemia, SES, smoking, physical activity etc.
Title: Change "Quality diet" to "Diet quality".

Abstract:

Line 57: IMT needs to be defined. I suggest using "common carotid artery intima media thickness" instead of just "carotid IMT" as the common carotid artery was examined (line 151). I suggest to update the manuscript throughout.

Lines 57-58: The authors mention the study analysed the relationship between the carotid IMT and the presence of plaque. Carotid target organ damage was also an outcome. This should be included.

Line 58: Consider rewording "the quality of the diet" to "diet quality".

Line 59: Consider adding the population of interest e.g. "Spanish adults".

Line 60: Add "of" to "The population comprised 'of' 500 individuals...".

Line 62: Change "includes" to "included". The authors need to amend the manuscript to be written in past tense.

Line 63: Include the word "quality" after lowest and highest to make this more clear.

Line 64: As above. Carotid target organ damage was also an outcome. This should be included.

Line 66: Needs correcting. It should read "40.08 ± 2.79".

Line 67: Change "while" to "and". Reframe from using the word "patients". Consider changing to "participants". Update manuscript to keep consistency.

Lines 71-72: Consider rewording the conclusion statement to "The diet quality index was not associated with subclinical atherosclerosis in this Spanish population at risk of cardiovascular disease".

Background:

Line 80: "Clinical complications" needs to be defined. This also needs a reference. "intima-media thickness" can be abbreviated because it was defined in line 78.

Line 81: Remove "detection". Define "complications".
Line 82: Is this supposed to say "...by up to four-fold in comparison to individuals who do not suffer from this type of lesion"? This sentence needs to be reworded. "This type of lesion" - is this referring to increased IMT or atheromatous plaque or both?

Line 85: Mediterranean diet should be defined here and not line 87.

Line 89: I suggest changing the word "connection" to "association" and updating the manuscript throughout.

Line 92: Change "to" to "with".

Lines 93-94: This sentence needs a reference.

Lines 96-97: This sentence is unclear and needs rewording.

Line 99: Please check this reference. It does not seem to support the statement.

Line 101: Suggest rewording to "Diet quality was assessed using the Diet Quality Index (DGI)...".

Methods:

Titles in the methods section need to be kept consistent e.g. some have ':' or '.' or nothing after the title.

Line 105: Consider rewording to "The MARK study is a cross-sectional study.."

Line 114: The authors might like to include a participant flow chart so it is clear why 1884 participants were excluded from the analysis.

Line 118: Is this supposed to be "vascular mortality risk between 3-5%"?

Lines 119-120: The MARK study reference 19 does not include "moderate risk according to the 2007 European Society of Hypertension guidelines for the management of arterial hypertension" as part of the definition criteria for intermediate cardiovascular risk. Is this a new criteria to the current study?

Line 122: How was "a personal history of atherosclerotic disease" defined? Was this self-reported?

Line 132: Change "The quality diet" to "Diet quality"

Lines 133-134: Reference is needed to demonstrate validation of the SDQS questionnaire.
Lines 134-144: This section needs to be rewritten to be more clear. If possible, food groups and portions need to be defined and scores need to be explained. It is also not clear whether the higher the score the better (or vice versa).

Line 145: I would suggest changing the title to "Common carotid artery intima media thickness".

Lines 159-162: Consider swapping these two sentences around. A reference would be good here to confirm the definition of carotid target organ damage.

Lines 164-174: References need to be inserted to back up definitions made for hypertension, diabetes, dyslipidaemia and obesity. Obesity should be defined as ≥30 kg/m2 not >30 kg/m2.

Lines 180-184: This section needs to be rewritten. I would reframe from using the words "qualitative" and "quantitative" and use the words "continuous" and "categorical" instead.

Line 180: Define which results are expressed as mean ± standard deviation. I would suggest changing this sentence to something like "Descriptive statistics were expressed as mean ± standard deviation for continuous variables or number (%) for categorical variables".

Line 184: Remove 'a'.

Line 186: Mean and maximum carotid intima media thickness is mentioned here. Maximum common carotid artery intima media thickness needs to be mentioned in the methods section.

Results:

Line 197: Change "patients" to "participants". Update manuscript throughout.

Line 198: Insert "±SD" after "mean". Update throughout manuscript. Table 1 should have the statistical tests used in the footnote of the table. Obesity definition should be ≥30 kg/m2 not >30 kg/m2 (Table 1). Put n=500 in "OVERALL" heading (Table 1).

Line 209: IMT needs to be clarified whether is it mean or maximum. Please clarify if the beta was standardised or unstandardized in Table 2.

Line 212: IMT needs to be defined here as IMT>0.9mm.

Line 214: Figure 1 should state the number per tertile in the figure or the figure legend. There is also no indication which figure is 'a' and which figure is 'b'. Please state the statistical test used in the figure legend.
Discussion:

In general the English needs improving in this section.

Line 222: This sentence need correcting.

Lines 249-253: This is somewhat confusing as it is not clear whether the authors are comparing the results of the Asklepios study to the current study or to previous results obtained from the MARK study. Please reword.

Line 251: Needs a reference. "In the Asklepios study [reference], it is…".

Line 254: Remove "usually and".

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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:

Needs some language corrections before being published

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