Reviewer’s report

Title: Acute effect of healthy walking on arterial stiffness in patients with type 2 diabetes and differences by age and sex: a pre-post intervention study.

Version: 0 Date: 01 Oct 2018

Reviewer: Reviewer 2

Reviewer’s report:

PEER REVIEWER COMMENTS: To view the full report from the academic peer reviewer, please see the attached file.

REVIEWER COMMENTS FROM REPORT: This is a generally well-written paper that looks at the effect of healthy walking on arterial stiffness. It appears to be an important topic, and the research question appears adequately addressed with the methodological approach. I have a few comments to improve the clarity of the manuscript, which I outline below.

REQUESTED REVISIONS:

Title:

- It's good practice to include the study design in the title. I understand this paper is a sub-analysis of an RCT, but the design of the analysis was not randomised. Something should be included to give the reader an understanding as to the methodological approach.

Introduction

- The aim probably needs some rewording. The authors aimed to "evaluate the acute effect", but without a randomised design it's not possible to achieve this aim. Would "association" work better?

- Do the authors mean "gender", or "sex"? I think they are referring to the latter.

Methods

- The sample size presented is one not related to the outcome of interest. Could the authors perform a post-hoc sample size calculation on the paper's current outcome so ensure that the analysis was adequately powered?
- How were the participants divided into different walking intensities? Was this random or was it based on ability, for example?

- Could the authors comment on the extent to which measurement bias was reduced? e.g. were the CAVI examinations done by staff blinded to the aim of the study? Was is the same member of staff for each individual participant? How can validation be assured here?

- It's not clear how the authors manipulated the CAVI/ankle pulse pressure to create a binary variable for the logistic regression analysis.

- It's also not clear how soon after the walking ended that post-intervention measurements were taken.

Results

- The authors have conducted a high number of statistical tests, and this increases the chances of false positives. Could the authors correct for multiple testing?

- In Table 5, should the authors be adjusting for baseline CAVI/ankle pulse pressure values?

- Why did the authors not consider analysing the data by exercise intensity?

Discussion

- The authors should consider using more cautious language in their discussion - this was a pre-post intervention without a control group, and with probable Type 1 Errors - so causality cannot be reliably inferred.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

No

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

Quality of written English
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Needs some language corrections before being published

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