Reviewer’s report

Title: The ankle brachial index in people with and without diabetes: Intra-tester reliability

Version: 0 Date: 14 Feb 2020

Reviewer: Debbie Sharman

Reviewer's report:

Many thanks for submitting your manuscript outlining your research. Whilst I commend your work and efforts, I feel that in it's present format, it is not an easy paper to read and for that reason, you may find many of your [intended] audience will not reach the end of your paper.

To assist you further, I would like to make the following comments and recommendations to support you in achieving publication:

Background:

In your second sentence of the opening paragraph, line 54, insert 'the' between "arteries," and "presence". At the end of this sentence please clarify which population you are specifically referring to.

Lines 63-64 - you refer to a normal value of 1.00-1.40; 0.9-0.99 as borderline with below 0.91 representing PAD. Your reference here is surprisingly from a cardiology journal - I think there are more appropriate references you could use with more widely accepted reference values. The American Diabetes Association cites normal reference values as 0.91-1.3. Perhaps some discussion as to why these are different. What is the most current consensus document?

Line 66 - you cite "Current international guidelines...." but only give 2 references, one again, from a cardiology journal and another paper from 2007, which may not be thought of as current. Have you considered the IWGDF 2019 guidelines on PAD (https://iwgdfguidelines.org/pad-guideline/) and also A Systematic Review for the screening for peripheral arterial disease in asymptomatic patients, J Vasc Surg. 2015 Mar;61(3 Suppl):42S-53S for further authority? The conclusion from the 2015 systematic review does not support the benefit of routine ABI screening, and it would be good to hear some further discussion regarding the value of it in clinical practice. I do note however, that you refer to your own 2019 systematic review (reference 19) but I think readers would value some more background here to understand why your primary aim was to just determine intra-tester reliability (and not to consider inter-tester reliability which would perhaps be more applicable to every day clinical practice, and has been reported as having little variability?). It might also be helpful for the reader to remind them of the difference between intra-tester and inter-tester variability.

Methods:

Lines 105-107 Does this achieve adequate power? Many readers, not actively involved in research, will not be familiar with how you have presented this.
Statistical analysis 130-162:

You have given nearly 10% of your paper to this section and I feel that you may loose all but the most hardened researchers and statisticians here. Whilst I do not wish to undermine the academic nature of your study (fitting for a research journal such as this), personally I think this section would be better summarised and simplified.

Discussion:

Lines 202-203 you state "The results suggest that the intra-rater reliability of the ABI is excellent, which is comparable to the findings of previous studies...." but on page 4 under Background line 79-80 you state "There has also been limited investigation of the intra-tester reliability of the ABI in people with diabetes, with only one previous study....". Please could you address this inconsistency?

I feel there are too many abbreviations in your discussion section - I would suggest either avoiding the less familiar abbreviations or consider including a list of abbreviations that the reader can easily and quickly refer to.

Line 250 you note that the presence of diabetes was not significantly associated with an abnormal ABI. It is well documented that diabetes can be associated with falsely elevated readings and I would like to see some discussion of this here.

You have not specifically included a section on 'Limitations' of the study. Lines 254-262 perhaps touch on this but I think it would be helpful to include a specific sub-section to discuss the study limitations.

Conclusions:
I don't like the use of abbreviations LOA and SEMs (line 266) - I feel these should be written in full.
It is not obvious what the implications are, of your research, on actual clinical practice. Could you include a summary here?

I hope this is helpful and I look forward to seeing you revised paper.

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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

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