Reviewer’s report

Title: Factors influencing participation in a vascular disease prevention lifestyle program among participants in a cluster randomized trial

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Reviewer: Jeroen Lakerveld

Reviewer’s report:

The authors provide a well written paper on factors associated with (non)attendance to a lifestyle intervention, and solid statistical methods were used.

Although outcomes are potentially relevant for future interventions (e.g. to tailor recruitment strategies and intervention approaches), I am not convinced that the methodology used is – in its current form- adding much value.

My main concern is that factors associated with (non)attendance is assessed in a selection of individuals that already responded to initial invitation, were eligible, attended the health check and agreed to be referred to receiving the Lifestyle programme. The identified factors were therefore probably very specific to those who were really far in this specific selection process, which makes it hard to generalise results. There were 3,128 patients invited, and only 125 participated. This means that the reach was low (less than 4%). This is not uncommon with this type of recruiting methods, and it would therefore be relevant to know who these non-responders and non-attendees are, in what aspects they differ from attendees, and why they did not respond/attend. The introduction section shows that the authors are acknowledging the need to evaluate this (paragraph 3).

[Major]
1.) The difference between the non-attendees and the low-attendees is, as I see it, larger then the difference between the low- and high attendees. I recommend to merge the latter two (attender), and analyse the non-attendees as a separate group (non attender). I realise that this may change the results.

2.) Introduction (page 4): Please check refs 3-9, as they do not prove the effectiveness of lifestyle interventions (they rather suggest the contrary, or evaluate the efficacy or secondary prevention). It is well known that lifestyle interventions are efficacious. However, so far, rct’s evaluating the effectiveness of programmes that target lifestyle behaviours to prevent diabetes or cardiovascular diseases in primary health care settings have shown mixed effects, and if effective, the effects were small and unsustainable.

3.) 30 practices invited 160 individuals each (described in the Methods), counting up to n= 4,800. Please explain why only 3,128 individuals were invited (Figure 1).

[Minor]
4.) The stages of change model has long since been abandoned as a useful framework to categorise individuals (mainly because they tend to shift between stages in a relatively short term). This could be added in the discussion section as reason for not finding any association with the readiness to change.

5.) The factors found could be discussed in the light of other study results (e.g. by Lakerveld et al. 2008), as they differ mainly with regard to those who are employed or not.

6.) Please use the term patients or participants, not both.

7.) Last sentence of page 17 is not a proper reflection of the results of the current study and should be omitted.

8.) Please also add a box to Figure 1 with number and reasons of those who attended the health check but were not referred.

I hope this is useful.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests