Reviewer’s report

Title: Effect of a Pedometer-based Walking Challenge on Increasing Physical Activity Levels amongst Hospital Workers

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Reviewer: Sabine Drieskens

Reviewer's report:

Reviewer comments to the author

Physical activity is indeed a public health issue that needs to be encouraged, which is the main purpose of this study. Therefore, the goal of this study is very interesting, but a major revision of the manuscript is definitely necessary. It cannot be published in the current format.

In general

- The English language needs to be revised by a native speaker

- Paragraphs need to be restructured and revised

- Too much repetition

- Better describe the Methods part

- The fact that comparison of the samples was not possible is a big shortcoming to me, as well as the small sample size (low response rate)

Abstract
Line 39 : add 'in' before 'April-August 2017'
Line 45 : Drop 'Around' since I suppose that 212 and 194 are the exact numbers
Line 45 : add 'respectively' before 'at baseline and post intervention'
Line 46 and 50 : I do not understand the word 'secular' in the sentence
Line 49 : reformulate 'from baseline'
Line 51 : I propose tow cut this sentence in two, so start with a new sentence with 'However.
Line 51 : replace 'increase above' by exceed'

Introduction
Line 60-61 : I think this sentence is not correct
Line 63 : I would write '26% of men and 36% of women' and so drop 'respectively'
Line 64 : same remark (12% of men and 24% of women)
Line 65 : specify the WHO recommendation
Line 65: I would drop 'these adults' or reformulate
Line 62-66: 'Physical inactivity … [4]' => I would put this part in the beginning of the second paragraph
Line 74: I would replace 'for male and female individuals' by 'for both males and females'
Line 74: [8] is in Italic
Line 74: [8] this study concerns only women. But what about men? Is it necessary to mention this study?
Line 75-76: I would replace 'during a 1-year-pedometer-based observation' by 'based on a 1-year pedometer observation'
Line 76: 2 times 'some' in the same sentence
Line 79-80: sentence is not clear to me
Line 82: This information is already mentioned in Line 73-74 (repetition)
Line 85: 'decreases' instead of 'decreased'
Line 86: 'sick leave' and 'absenteeism' => is not this the same?
Line 91: Here you use worksite, but most of the time you use workplace
Line 92: improvements in health => Ok, but what do you mean with improvements of workplace?
Line 94: replace 'lower' by 'decrease' focus
Line 95: replace 'investigators have not focused on' by 'the focus was not on'
Line 96-97: This part of the sentence is not quite clear to me
Line 98-99: Also better formulate this sentence
Line 99: Replace 'This focus has' by 'Such programmes have' => in Line 100 'as they are convenient'
Line 98-103: I miss some references here
Line 99 versus Line 102-103: maybe put this in one sentence since it is almost the same

Methods
Line 109-113: Explain this part better please. I would not abbreviate the name of the month.
Line 115: 'Participants' => at this stage they are not yet participant => Maybe combine the sentence of Line 115 and 116?
Line 117: Maybe better to change the sentence to 'only 212 invited staff members were willing to participate'.
So the response rate is only 26.5%, which is quite low.
Line 117: Figure 1 => see also my remarks concerning this figure at the end
Line 119-120: Again, I do not think 'participants' is the right descriptions. I suppose that all the 800 staff members received this e-mail, but only 26% of them participated?
Line 121-122: 'At the time …' also this is again a repetition of something that was already mentioned in the first paragraph (Line 116).
Line 124: Around? I suppose 212 is the exact number => drop around. Also this number was already mentioned in the first paragraph.
Line 117 and 126: once (Figure 1) was written in bold and the other time not
So conclusion concerning the first and second paragraphs (Study design and population): these needs to be revised and better structured!
Line 129: 'used' instead of 'utilised'
Line 131: 'announced' instead of 'advertised'
Line 131: the text contains a mix of the words 'programme' and 'program'
Line 134-135: Please better explain this part. Is there a difference between members and participant?
What do you mean with 'sub-communities' and the 'Aspetar community'? Subsample, does it concerns the 54 participants?
Line 136-138: 'All hospital staff … ' => I have the feeling that this part belongs at another place
Line 141: I do not think weight, height and smoking (Table 1) are 'sociodemographic information' => replace it by 'Background information'
Line 146: Again I have the impression that this was already described elsewhere (Line 129) => make one sentence of it
Line 147-148: Please improve this sentence.
Line 150: Already mentioned in previous paragraph (Line 142-134)
Line 154: also mentioned in Line 133
Line 157-158: 'By targeting …' => not clear to me
So conclusion concerning the paragraphs of 'Intervention': too much repetition, please reorganise!
Line 162: Did you use the short or the long version of IPAQ?
Line 163: does the word 'respectively' needs to be included after to determine?
Line 164-166: Again this part is a repetition of the previous sentences. Please integrate and reformulate it better.
Line 167: Maybe better to indicate that it concerns validated instruments.
Line 169: replace 'encompassing' by 'measuring'
Line 173-174: Only mention once [17]
Line 174-177: Is it necessary to indicate this part?
Line 180-182: the same remark. Maybe better to just mention that it concerns a validated instrument (see remark concerning Line 167)
Line 185-188: same remark.
Conclusion: I would shorten the part 'Questionnaires'.
Line 198: I would suggest 'number' instead of 'count'
Line 222: I suggest 'Participation was voluntary'

Results
Line 227: now you are talking about 'pre-intervention'. Before, as in 'Methods', you were talking about 'baseline period'. Maybe it is better to use everywhere the same description. For me 'pre-intervention' is clearer.
Sorry but for me it is not clear (based on the Methods) if the pre-intervention sample contains the same participants as the post-intervention sample. I suppose so. So if this is the case, than there is a drop-off of 8 participants (which is possible of course). Nevertheless, what I do not understand then, how it is possible that in the pre-intervention there are for ex. 64 women and in the post-intervention 69 women, so 5 more. Based on this I would conclude that it does not concern the same sample. However, the goal of this study is the compare the evolution of the PA status of a population before (pre) and after (post) the intervention. For me this needs to be better described (in Methods).
Line 229: This was also the case in the post-intervention sample. Also, I would talk just about the pre-intervention sample and the post-intervention sample, instead of the total (study) population (confusing). Same remark for age.
Line 231-232: previously, the prevalences were without decimal => adapt. Why don't you mention for ex. the participants are in most cases married (84%)?

Line 234: The results of SF36v2 are not discussed. I suppose since there are no differences between the pre-intervention and the post-intervention. Maybe mention this in a short sentence.

Line 237: cross-sectional increase => it increased to … after intervention (or post-intervention)

Line 238: I would drop 'consequently'

Line 240-241: I would formulate it otherwise: The prevalence of participants with a low PA level decreases for 22% before to 11% after intervention. And what about the prevalence of participants with a high PA level? This increases. Not worth mentioning it?

Line 241-243: Time spent sitting is similar => not worth mentioning it. However, the time sitting at work has increased! I thought the purpose was to decrease it with the intervention. On the contrary, time spend sitting on other leisure activities has decreased.

So you are talking about increases/decreases, but are they significant? I do not think so because of the small sample

Line 247: no * (p=0.048) was added in the Table among 'After' and here in the text you indicate that the number of steps were significantly higher during post-intervention.

Line 251-253: What do you mean? That the difference between men and women in pre-intervention and post-intervention was not significant, so only significant during the intervention. Then I would drop this sentence 'However, … (p=0.420).

In case something is not significant, I would not mention it: so this concerns 'age' and BMI. Are mention it in a shorter version.

Discussion

Line 264-265: Is this sentence referring to the decrease of the prevalence from 22% (before) to 11% (after)? Or to the results of table 3? In case of table 3 (I suppose so) => I would drop 'low' in Line 265 (confusing).

Line 265-266: but I thought there was only a significant difference during intervention?

Line 273: sorry, but where/how did you get these numbers?

Line 275: [28] is indicated in a different way as the rest of the references

Line 288-291: I do not understand this: you compare vitality and social functioning with guidelines of PA

Line 291-292: where do come these data from? In the results you never mentioned the results of SF36.

Line 294-299: sorry, not clear.

Line 301-303: so the mental health didn't improve in this study?

Line 307-309: sorry but I do not understand why comparison is not possible. The pre- and post-intervention concern the same sample?

Line 311: sorry, but again I can't find these data back in Table 2 (/week so I have divided the numbers by 7 - using total activity and total (MET-minutes per week))

Line 329-330: 10.000 steps is a guideline, but I do not think it is the same guideline as being 30 minutes moderate PA per day. Indeed no participants achieved the goal of 10.000 steps.

Line 346: what is 'bad weather' in your case? Too hot? Depends maybe by country? Probably in other countries it is rain and cold…

Line 355-362: I really do not understand why comparison was not possible. For me this is a very big shortcoming of this study, as well as the small sample size (low response rate).
References
Line 476: problem with a name

Figure
Source-box: 800, is this the exact number? Maybe indicate it as (n=800).
The source population is divided in three types of study population? So one group participated in
the e-survey, one in the e-survey at follow-up (but is not this the same as the first group?) and the
third used the pedometer (but is not this a subpopulation of the first group?). I have the
impression that this figure is not well design. In addition, I miss the numbers in every box.

Tables
Table 1:
Please put a space between the number and the percentage. In addition, I would put the number
between brackets and put the percentage first, i.e. 30.2 (64). On the other hand, the number is not
even necessary when you put the total number in the heading.
Adapt the title: replace 'Sociodemographic characteristics' by 'Background information' (see
comments in Method)
Table 2:
Adapt 'IPAQ … n(%)' to 'IPAQ … n (%), but is it necessary to add n (%) here since it is also
mentioned in the 2 columns on the right.
You also mixt 'n' and 'N' => uniform
Time spend sitting - on a Non workday => there is an item 'at work': I don't understand this since
it concerns 'Non workday'
In the Table you use P, but in the text p => uniform
Maybe better to indicate * p<0.05 => this * can also be used to indicate the significant difference
between men and women during intervention (p=0.024)

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Please indicate how interesting you found the manuscript:

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Not suitable for publication unless extensively edited
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