Author’s response to reviews

Title: Nocturnal finger skin temperature in menstrual cycle tracking: Ambulatory pilot study using a wearable Oura ring

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Version: 2 Date: 04 Oct 2019

Author’s response to reviews:

Dear Editor-in-Chief of BMC Women’s Health,

Thank you for the feedback and the opportunity for another revision. Please find the revised manuscript entitled ‘Nocturnal finger skin temperature in menstrual cycle tracking: Ambulatory pilot study using a wearable Oura ring’, and revised figures 2, 3, 4, 5 and 6.

We have made our best effort to revise the manuscript according to the recommendations. As recommended, we have now excluded the subject with progesterone medication from the analysis. We have also analyzed the main results both including all remaining subjects and also after exclusion of two subjects with BMI over 30. Please see our point-by-point response for the reviews below. Track changes functionality has been used to show the changes in the manuscript.

Oulu, October 4, 2019
Response to reviewers

Thank you for the reviewers’ valuable comments on this manuscript. Track changes functionality has been used to show the changes in the manuscript.

Reviewer reports:

Reviewer 2 (Reviewer 2): PEER REVIEWER ASSESSMENTS:

GENERAL COMMENTS: I am very sorry to acknowledge that all the points that I have highlighted were addressed, but the severe limitations of the study still represent a barrier which prevents me to suggest publication in the current form.

REQUESTED REVISIONS:

Comment: I can understand that this is only a pilot study, as appropriately stated by the authors, but I am actually concerned that data analysis based on such low sample size does not allow to draw a firm conclusion about the primary and secondary outcomes of the study design.

As I noticed from the new manuscript draft, my concerns were shared also by other reviewers.

Reply: Thank you for the comment. We acknowledge that the sample size is low to draw too firm conclusions on the outcomes. We have modified the conclusions to emphasize that this is a pilot study and the results are suggesting a potential of the method (lines 48-49, 376-379). The results of this study can be used for power calculations of the sample size for a further larger study. We would also like to emphasize that the algorithms were developed based on a separate pilot study and literature.

Indeed, the other reviewers are in favor of recommending the paper for publication after minor final editing.
Comment: I would like to invite authors to use selective inclusion/exclusion criteria (extremely low/high BMI, age and other variables such as concurrent pharmacological treatments and/or diseases), include more women, and perform another data analysis before to re-submit the article for peer review.

Reply: Thank you for your suggestion. We have taken into account the comments of all reviewers when making the decision on redoing the analysis. We have now excluded the subject with progesterone medication from the analysis. We have also presented the main results both including all remaining subjects (n=22) and also after exclusion of those with BMI over 30 (n=20). As expected, the results improved when those with high BMI were removed from the analysis. The text throughout, figures 2-6 and tables 1-2 have been modified accordingly. We would like to emphasize that this is a real-life feasibility experiment, which supports presenting the results also including the high BMI subjects.

Helena Kopp Kallner (Reviewer 3):

My main objections have been met and I agree with comments from other reviewers. At this point I leave comments to the other reviewers to their objections. I have two last comments

Comment: 1. To use any progestin/progesterone medication would really be unacceptable in this study as it definitely affects BBT during the time the woman takes the progestin/progesterone. Would exclude that woman.

Reply: Thank you for this important comment. We have excluded the subject with progesterone medication and redone the analysis. The text throughout, figures 2-6 and tables 1-2 have been modified according to this.

Comment: 2. 24/7 sound a bit unscientific to me. Please revise. Suggest around the clock or without interruption.

Reply: Revised as suggested ‘around the clock’ (line 344).

Victoria H. Jennings, Ph.D. (Reviewer 4):

Comment: I commend the authors for their responses to the reviewers and the edits to the manuscript. With some editing, it is ready for publication.

Reply: Thank you for your supportive response.