Author's response to reviews

Title: The effect of two different health messages on physical activity levels and health in sedentary, overweight middle aged women

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The effect of two different health messages on physical activity levels and health in sedentary, overweight middle aged women

Dear Associate Editor,

Further to your email received on 18th October 2010, the above journal paper has been revised. Each of the reviewer’s comments has been addressed individually in the section below. Each point provides a brief description of the changes made in the text in accordance with the reviewer’s comments, as well as the page and line number where these changes can be located in the manuscript. The changes are highlighted in red in the manuscript.

If there are any further comments, please do not hesitate to contact me.

Regards,

Associate Professor Sebely Pal
Response to Reviewers/Editors comments

Associate Editor:

Comment by Editor: Discussion of the limitations of 30-min group observing their step counts on a weekly basis should be included in the discussion eg. weekly feedback on their activity, potential non-compliance with resealing pedometers etc.

Authors’ response: As suggested, we have included limitations above in the discussion (page 17, lines 11-16). “All participants in the 30 minutes group were given instructions in the beginning of the study to only record weekly steps and reseal pedometers. They all signed a form to acknowledge that they understood these instructions and would abide by them. However, it was unknown whether there was potential non-compliance with resealing pedometers. It was also unclear whether the 30 minutes group observing their step counts on a weekly basis had an influence on their general activity levels”.

Comment by Editor: It would be useful to broaden your discussion to the more general literature around cognitive feedback and self monitoring to make this manuscript more relevant to a wider audience.

Authors’ response: As suggested, we have included a paragraph related to feedback and self monitoring in the discussion (page 18, line 8-20). “In this study, overweight and obese women accumulated more total steps/day when instructed to walk 10,000 steps per day than when instructed to walk 30 minutes/per day. It appears that having a step goal which can be monitored with the use of a pedometer, where progress can easily be tracked from a reference or baseline point, can act as a motivator and enables self monitoring which in turn leads to increased physical activity. Setting a step goal in conjunction with the immediate feedback that the pedometer provides may be key motivational factors for increasing physical activity. Other studies have shown that immediate feedback from the pedometers enable participants to set realistic goals, act as an environmental cue, raise awareness of current walking behaviours, to motivate, to self-monitor, and to increase walking behaviours. The present findings may be relevant to the wider sedentary overweight and obese population where using a pedometer and having a step goal may provide a promising strategy to increase physical activity”.

Reviewer: 1

Overall Comment by reviewer: This is a very interesting paper, the manuscript is well written and presented throughout.

Materials and Methods

1.Reviewer’s comment: Page 7, line 2. You mention that your sample were aged between 35-55 years, it is likely however that few participants under the age of 45 years have gone through the menopause. However, in the introduction, you make a good case for studying postmenopausal women. If you have this information from your participants, it might be nice to say how many are premenopausal, peri-menopausal, and postmenopausal. Alternatively, you might want to play down
the section in the introduction on increased risk in postmenopausal women so that the text is more reflective of your sample.

**Authors’ response:** We have taken the reviewers suggestion and removed the line “Middle aged women are especially at increased risk of such chronic diseases due to oestrogen deficiency following menopause, and are at greater risk of CVD than males of the same age and pre-menopausal women” from introduction (page 4, lines 10-13).

2. **Reviewer’s comment:** Page 7, lines 4-6. You mention that interested participants were screened, and then those meeting the inclusion criteria attended an orientation session. It might be nice to add more detail here in terms of the numbers of participants who volunteered, and the numbers who did not meet the inclusion criteria.

**Authors’ response:** We have added more detail regarding recruitment as follows (Page 7, lines 13-15) “Seventy eight women were screened. Thirty two women met the inclusion criteria and attending the orientation session. Two women dropped out of the study before commencement due to work commitments”.

3. **Reviewer’s comment:** Page 7, lines 18-22. How can you be certain that the 30 minute group really did comply to the protocol and re-seal the pedometer after recording their weekly steps?

**Authors’ response:** The 30 minutes group wore a sealed pedometer for twelve weeks and therefore had no knowledge of their record of steps/day. The pedometer was sealed with tape so that the number of steps/day was concealed. This seal was only broken once per week by the participant so that the total weekly steps could be recorded and then the pedometer reset and resealed. We believe that the participants resealed the pedometers with tape as instructed for a number of reasons:
1) All were given instructions in the beginning of the study to only record weekly steps and the importance of adhering to the instructions.
2) They all signed a form to acknowledge that they understood these instructions and would abide by them. We have included a line to clarify this point (page 8 line 1-2). “Participants acknowledged that they understood the instructions and would comply with them by signing a form to confirm this”.
3) We asked the participants at the assessment points whether they had adhered to the instructions.
4) Groups did not know whether they were in the control or pedometer group.

We have also included limitations regarding this group in the discussion (page 17, lines 11-16). “All participants in the 30 minutes group were given instructions in the beginning of the study to only record weekly steps and reseal pedometers. They all signed a form to acknowledge that they understood these instructions and would abide by them. However, it was unknown whether there was potential non-compliance with resealing pedometers. It was also unclear whether the 30 minutes group observing their step counts on a weekly basis had an influence on their general activity levels”.

General comment: In any study, when participants are asked to take a supplement or adhere to a treatment, we have to assume that they will follow instructions or else it would be impossible to conduct any human trial. We have to rely on the honesty of the participants.

4. **Reviewer’s comment:** Page 8, lines 3-5. You say that participants recorded their pedometer wear times on a calendar throughout the study, it would be nice to present this compliance data in the
results. Did both groups have 100% compliance over the 12 week intervention? If not, how did you control for missing step counts, particularly in the 30 minute group since missing 1 day in any one week will bring down the weekly average.

Authors’ response: In both groups, we had 100% compliance as reminder phone calls and emails were sent to weekly remind subjects to record their steps on the calendar.

5. Reviewer’s comment: Page 8, lines 3-5. On a related point, did you apply any criteria on what constituted a valid day of pedometer data in terms of wear time? For example, in adults mainly with accelerometers, most researchers state that participants have to have worn the device for at least 10 hours/day for that day to be included in the analysis. It would be interesting to report your mean pedometer wear times in the results for each group also, seeing as you have this data.

Authors’ response: We asked subjects to wear their pedometer from the time they woke up until they went to bed. We did not apply any other criteria to subjects on what constituted a valid day of pedometer wear time.

Statistical analysis
6. Reviewer’s comment: Page 10, lines 6-8. I would recommend checking the type of ANOVA that you used for your analyses. Did you really use a repeated-measures ANOVA with intervention group as a between-subjects factor? Since it’s not possible to compare differences between different groups using a standard repeated measures ANOVA, this is fine for the within group comparisons.

Authors’ response: Page 10, line 8: This has been corrected to “Differences between groups was analyzed using one-way analysis of variance”.

7. Reviewer’s comment: Page 10, line 8-9. Did you apply a Bonferroni correction to your post hoc tests?

Authors’ response: Please see page 10, line 9-10: “Data was analysed further by post-hoc analysis using the Least Square Differences (LSD) method to identify specific differences”.

Methods/Discussion

8. Reviewer’s comment: General point, did all participants keep a daily log of their activities in case they did something that was not picked up by the pedometer, e.g. swimming/cycling?

Authors’ response: Yes, all participants also completed physical activity logs daily.

Minor Essential Revisions

Abstract

9. Reviewer’s comment: At the start of the Results section, insert the word ‘there’, so the abstract reads... ‘Results showed that there were no changes...’
Authors’ response: “There” has been inserted as requested.

Materials and Methods

10. Reviewer’s comment: Page 8, lines 4-5. Insert the word ‘when’ into this sentence, so the text reads... ‘were asked to record each day when they wore their pedometer on...’

Authors’ response: “when” has been inserted as requested.

11. Reviewer’s comment: Page 9, lines 3-4. Delete one ‘in’ in this sentence, i.e. ‘in’ appears before and after the brackets in this sentence.

Authors’ response: Page 9, lines 5-6. “in” deleted before bracket and “during” was inserted after brackets

Results

12. Reviewer’s comment: Page 11, line 2. Delete “(data not shown)” from the end of this sentence as the age data are presented in the paper.

Authors’ response: “data not shown” is deleted from the end of sentence (Page 11, line 2).

Discussion

13. Reviewer’s comment: Page 15, line 22. Delete ‘the’ towards the end of this line, so the text reads “...guideline with an extra 4616 steps/day...”

Authors’ response: “the” deleted from Page 15, line 22.

14. Reviewer’s comment: Page 16, line 22. Delete ‘steps’ as this word appears twice after “4616...”

Authors’ response: ‘steps’ deleted from Page 16, line 22.