Reviewer's report

Title: Effect of an educational program encouraging increased physical activity through use of a pedometer on anthropometric measurements after childbirth: a randomized controlled trial

Version: 3 Date: 15 September 2011

Reviewer: Graham Baker

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Major compulsory revisions

1. The authors provide a well written background section to this study and I am convinced of the need for promoting physical activity within this population. However, I am less convinced of the authors knowledge of pedometer-based interventions given they reference only one relevant manuscript (Sebely) and there is no mention of recent systematic reviews and meta-analyses (see Kang, Bravata and Richardson) and hence there is little justification provided for pedometers to be used as the focal point for the intervention.

2. Related to this there is a severe lack of description of the actual intervention itself and relevant programme theory (see Tudor-Locke –why do pedometers work?). The title of the manuscript suggests that an educational programme was provided yet there is no evidence of this in the methods section. It appears that the authors instead provided a pedometer and a simple goal-setting strategy. There is no mention of what behavioural change techniques were utilised (if any) during the phone-call and pamphlet. Without this vital information replication of this study would be impossible.

3. This intervention does appear to be successful judging by the step count increase, yet there is no justification of the step-count goals provided to participants. For example why 70 steps/ per day as an increase, and why was a value of 5,000 steps/day chosen as the minimum criterion goal? Is it not also possible that some participants may have stopped increasing physical activity at 5,000 steps day whereas others continued to progress? The authors report on p4 that 30 minutes a day of physical activity is critical to general health. Hence, detailed information is required as to why the step-count goals were chosen and how they relate to any general physical activity guidelines. It is also important to note that published guidelines would suggest a higher amount of physical activity than 30 mins per day is required for weight loss (ISO stock report). How does the step-count goal equate to time spent in physical activity?

4. There is also a lack of information regarding the recruitment and randomisation procedures which should be provided in sufficient detail to allow replication. For example, it appears participants were recruited from 7 health centres so I am assuming that “health centre” was a stratification variable in the
randomisation process. Similarly the authors state that women who had given birth between 6 weeks and 6 months were involved in the study. I would suggest that the behaviours of women at either extremity of this time-frame could potentially differ and that this should be accounted for in the randomisation process or at least in the statistical analyses which I discuss later. I would like to know how these two potential confounding factors were accounted for during the study and suggest these be included in the discussion section also.

5. The authors should consider using the CONSORT guidelines for reporting RCTs to ensure all required information is present in the manuscript.

6. The authors do not state what version of the IPAQ was utilised during the study. Was this the long or short version and why that version chosen? The authors state that both groups increased in mean energy expenditure per week. Firstly, the authors should not use the terms energy expenditure and physical activity interchangeably as these are not the same variables. Secondly there is no justification as to why energy expenditure was used rather than the raw physical activity data – energy expenditure would be understandable if there was further discussion relating to the energy expenditure and expected weight loss versus actual weight loss but this is missing from the manuscript.

7. Why were both ANCOVA and t-tests used for between group differences? P8 states that independent group t-tests displays significant difference between groups in physical activity after the intervention yet in the methods section it is suggested this is the role of the ANCOVA. Further it is not actually stated what variable of physical activity this difference relates to, is it mean energy expenditure? As previously stated energy expenditure is not a measure of physical activity levels. I assume this refers to the IPAQ data – yet given the baseline data as described in table 1 would suggest that the data would be heavily skewed given the high % of participants in the low active category, are the authors suggesting that the data are normally distributed? The results of normality are not provided – whilst numerical data is not required it would be useful to know what, if any, variables were found to be non-normally distributed. Non-normal data is commonly found in IPAQ data.

Minor essential revisions

1. Error bars are absent from Figure 2 and should be provided.

2. It would be useful in Figure 1 to provide reasons for participant drop-out, particularly during the screening stage so that other researchers looking to conduct similar trials can factor this into any sample size calculations

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare that I have no competing interests