Reviewer's report

Title: Exercise in pregnant women and birth weight: a randomized controlled trial

Version: 1 Date: 17 August 2011

Reviewer: Michelle Mottola

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Interesting paper reporting the results of a RCT on maternal exercise and birth weight. Although this is a secondary analyses of the original reported RCT, the authors share interesting findings.

Major Compulsory Revisions

1) Pg. 4. What is the hypothesis of the secondary analyses?.
2) Pg. 5, line 3. The statement, “This is the secondary analysis performed after the initial study.” should be ended as shown because the secondary analysis was not performed in agreement with the CONSORT statement? Do the authors mean that the complete study (including the previously published original RCT and this secondary analysis) was conducted in agreement with the CONSORT statement?
3) Pg. 6, line 5. This paragraph is confusing. What was the postpartum test? Do you mean the postpartum visit? What do you mean by “lost to the test”? Please explain.
4) In figure 1, the flow chart starts with 105 women and then eliminates 10 after the intervention and another 9 at the postpartum visit in the EG. Does this mean that there are only 33 women in the EG group? In the control group, from 53 women, there are 11 and 6 women lost, leaving 36 in the control group? If this is the case than what should the numbers be in Table 1 and 2? Did the authors start with 105 or actually end with 105 after the women were “lost to test”? Also, on Figure 1, “astma” is misspelled - “asthma”.
5) Pg. 7 and 8 give detailed explanation for the intervention group but what happened to the control group? How were they treated? More detail should be added to methods.
6) Pg. 7, line 13. Please remove “as it is less dependable and precise during pregnancy compared with the non-pregnant state”. This reference is outdated as now there are validated target heart rate zones based on age for pregnant women that are quite dependable and precise.
7) Pg. 9, line 1. Change “ethnicity” to “descent” and also in the next sentence, change “Ethnicity of” to “Countries of origin for”.... “were”...
8) Pg. 10, par. 2, line 1 – does this mean they missed the postpartum interview or did not have birth records? Are these women reflected in Figure 1? Please see number 4 above.
9) Pg. 11, line 2. “birth weight” should also be added to this statement.

10) Pg. 11, par. 3. This should be changed to: “No major adverse effects or health problems resulting from the exercise program were reported. Two preterm deliveries occurred in the EG……and one in the CG.....” The previous statement in your manuscript sounds as though the preterm deliveries were a result of the exercise program. I don’t think this is what you mean.

11) Pg. 12, par. 1. Please rewrite this paragraph to report the important synopsis of your findings. Diet was not assessed in your study. Remove the statement that fewer women in the EG gave birth to a child > 4000 g as this is not true.

12) Pg. 12 par. 1, last line. What is the significance of an Apgar score <7? This should be expanded.

13) Pg. 12, par. 2, line 7. Remove the statement, “However, this was a RCT and possible changes in eating patterns should be equally distributed in the groups.” You cannot say this because you did not measure dietary intake. Were all women given the same nutritional advice? In the next statement, delete, “In addition” and replace with “However,”


15) Pg. 13, par. 3, line 5. Define LBW. Is this low birth weight or large birth weight babies? Do you mean macrosomic?

16) Pg. 13, par. 3, line 8. How are you findings consistent with the findings of Barakat et al. [23]? Your EG group has the same incidence of macrosomic as his control group? Similarly, Kinnunen et al [42] did not find any newborns above 4000 g but you had 9.6%. How is this similar?

17) Pg. 14, par. 2. This paragraph should be rewritten or deleted because reference [28] found that exercise did not improve maternal insulin sensitivity and was not correlated to offspring size. In addition, the next statement is also not true. How does this paragraph relate to your findings when in fact you did not see a change in fetal growth between your groups? Doesn’t this mean that the fetus is protected? The authors did not mention that there may also be adaptive mechanisms in place in a healthy pregnancy that protects the fetus during maternal exercise.

18) Pg. 14, par. 4. I agree that this is an interesting finding. Although there was a difference in the Apgar scoring at one minute, by 5 minutes there was no difference. Clinically, it is the 5 minute score that is relevant? This should be expanded.

19) Pg. 15, par. 1, last line. I would change to, “In addition, time management is vital if an exercise program is to be successful”

Minor Essential Revisions

1) Abstract – line 2, change sentence to “To date there are contradictory results regarding the role of .....”
2) Abstract – line 4, add “s” to “trimesters”

3) Abstract – line 6 and last line. Delete “newborn” from before “birth weight”. Also, pg. 4, line 5.

4) Pg. 3, line 9. Delete “has”

5) Pg. 3, line 12. Change “has” to “have”

6) Pg. 3, l4. Delete “s” from “restrictions”

7) Pg. 7, line 5. Add “s” to “muscles”

8) Pg. 10, last line. Delete “to have” and change to “exercising”

9) Pg. 12, par. 2, line 1. Add “s” to “strengths”

10) Pg. 12, par. 2, line 6. Change “is” to “was”

11) Pg. 13, par. 2, line 11. Change “kvasi-” to “quasi”

12) Pg. 14, line 1. Change “macrosome” to “macrosomic”

**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.