Author's response to reviews

Title: Newborn literacy program effective in increasing maternal engagement in literacy activities: an observational cohort study.

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Author's response to reviews: see over
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Dear Editors,

We would like to thank the reviewers for their comments and hereby submit a revised version of the manuscript. We have incorporated most of the suggestions of the reviewers.

Reply to reviewers comments:

Reviewer 1: Julia Carroll

Reviewer's report:
Generally I felt that this article was clear, well written and novel. The question posed by the authors is well defined and the data are sound. The title and abstract are clear. The method and results are appropriate and well reported, though the method was a little wordy at times. There are some limitations with the work: the control group is smaller than the intervention group, and it would have been useful to know whether the increased book reading had a concurrent or future effect on language and literacy. However, the authors show good awareness of these limitations.

I did not feel that there were any major revisions or minor essential revisions required. I suggest two discretionary revisions:

1. The method is a little repetitive at times. I would combine the two ‘study sample’ sections in the method and results into a single section.

The study sample sections in methods and results were combined.

2. The authors may also wish to cite research indicating that the earlier parents start reading to their infants, the greater the effect on language and literacy, e.g.:


We have included these articles.

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.

Reviewer 2: Cori Green
Reviewers's report:
1. This is an observational cohort study that assesses the effectiveness of the Read to Me! Nova Scotia Family Literacy Program. There is a great deal of literature to support programs starting in infancy promoting literacy, but there are few that start at birth, so this study is novel in that respect.

2. Reach Out and Read - the US literary program starts at 6 mo old and has been studied down to that age. In the background the authors state that relationship has been explored in toddlers, but there is some literature about infants.

We have changed the wording to reflect this.

3. Authors do not explain why parents of infants 10 mo or older were excluded, what is the rationale?

This has been addressed in the methods section. There were too few parents of infants greater than 10 months who were able to be contacted and so those older than 10 months of age were excluded.

4. Authors did not describe what questions were used for the phone interview. There are many validated questionnaires about parents' activities with their children, such as the StimQ READ tool. Were questions created by the authors? Were they adapted from prior study? Should explain that.

The phone questionnaire was initially created by the authors to evaluate the Read to Me! Program and its specific components in a separate study. This questionnaire has not been validated but we believe its face validity is high. When the current study was undertaken, the participants in the control group responded to the same questionnaire as those who had received the Read to Me! Program with the exception of the questions specific to the Read to Me! components.

A copy of the questionnaire used has been included as a supplemental document.

5. One confounder I did not hear much about is whether these infants were first-born or had siblings. Reading activities are definitely affected by child order per most of the early literacy literature.

The questionnaire did include questions about number of children in the home, however, the analysis of this relationship, albeit important, was beyond the scope of this paper. We have added a sentence in the discussion about this issue.
6. One limitation that was not mentioned is that there could be a selection bias particularly in the control group. Since recruitment was by mail requests and then the ward clerk- there could be a respondent bias here.

It is possible that there may have been selection bias present in the control group due to differences in recruitment however given the large sample size of the intervention group (which was recruited prior to the control group) it was felt that the method was appropriate to increase the sample size of the control group as much as possible. We have added a sentence in the discussion to address this issue.

7. Overall, this is a useful study. I agree we should be promoting literacy starting in the newborn period and the authors have shown it to be effective in terms of parental reading activities in addition to cost-effective.

**Level of interest:** An article of importance in its field  
**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

**Reviewer 3:** Martha Romney  
**Reviewer's report:**  
Confidential Editorial comments are submitted.  
**Level of interest:** An article of importance in its field  
**Quality of written English:** Needs some language corrections before being published  
**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.  
**Declaration of competing interests:**  
I declare that I have no competing interests

**Additional comments for response/revision by the authors:**

1) **Methods:**  
   a) The separation between the Control Group and the remainder of the study sample discussion is confusing to the reader.  
   i) Between the 3rd and 4th paragraph after the Control Group subheading, the authors should place a new heading, such as study procedures, to delineate that after the 3rd paragraph the
remainder of the section refers to both the intervention and control groups and not just the control group.

The heading Study Questionnaire has been added to separate the end of the Control Group subheading from the remainder of the methods which applies to both the intervention and control groups.

b) Intervention Group:

i) Please state in this section in which languages Read to Me! is available?

Read to Me! is available in English, French, Mi’kmaq and Arabic. However, at the time of the questionnaire it was only available in English and French. The text has been changed to reflect this.

c) Questionnaire? clarify if a previously published questionnaire or the author's own questionnaire. If not a previously validated questionnaire, please include the questionnaire as part of the submission.

We have addressed this in the Study Questionnaire section of the methods. The questionnaire had been included as a supplemental document.

2) Results:

a) Paragraph 1, First Sentence: If infants over 10 months were excluded, why were infants 11 months of age contacted? There was an upper range of 10 months. Was there a lower range that mothers would be interviewed? Why were these cut-off ranges used?

It was originally intended that infants older than 10 months were to be included but we were unable to contact many infants greater than 10 months so they were excluded. The lower range started from birth as there are few studies that exist which focus on literacy activities in this age group and we felt it was important to examine this further. A comment has been added in the discussion to highlight this issue.

b) Sample characteristics: The infant age dispersion and differences between the two groups need further explanation. Please present further analysis of this aspect. The text states that a sub-analysis revealed differences in the 4-6 month age group. Please state in the result section which group had the higher rate of younger infants? (It is stated in the next to last sentence of the discussion section.) What was the range and IQR? If there is a relationship between the major outcome variables and infant age, how does the age distribution differences affect your results? Was infant age at the time of study included in the multivariate analysis?
The was a higher rate of infants aged 4-6 months. This has been included in the results section.

Infant age was not included in the multivariate analysis. There was no difference in age of babies (continuous variable) between the intervention and control group.

3) **Outcomes:**

a) What variables were included in the multivariate model?

Age of primary parent, income level, education level and number of adults in the home were included in the multivariate model. A sentence listing the variables has been included in the statistical analysis of the methods section.

b) Table 2: Listen to the radio is the p-value supposed to be 0.05 or 0.08 as listed in the table?

The p-value for Listen to the radio in Table 2 is supposed to be 0.08 as listed in Table 2.

c) Table 3: There is no mention in the text to Table 3.

This has been addressed.

d) 4th paragraph: 1st sentence: Provide the data to support this sentence that baby age affected reading, talking and watching TV activities.

We have included the average number of minutes spent watching TV in Table 5.

e) Tables 4 and 5: if adjusted models, models were adjusted for what factors? Are all the factors listed in the tables included in the model?

All factors listed in the tables are included in the model.

4) **Discussion:**

a) Please comments on the clinical relevance of the findings. The intervention increased the time-spent reading by 5 minutes. This was statistically significant, but is this clinically relevant?
We believe that the findings of this study are clinically relevant because it represents a substantial increase in the intervention group as compared to the control group. The control group read 12 minutes a day and a 5 minute increase is therefore is a 40% increase. Studies have shown that the earlier children are read to the greater the effect on later language skills. If interventions, such as Read to Me! can significantly increase time spent reading then this may have a meaningful impact later literacy skills. We had not a priori defined what amount of improvement in reading time would be clinically meaningful but are confident that the results support the benefit of the Read to Me! Program.

b) 5th paragraph, 2nd sentence: Please justify this comment or qualify the statement.

This statement has been clarified.

c) 8th paragraph: Assessment measures were not necessarily comprehensive. Better to eliminate that phrase and state, ?Secondly, a wide variety of language?..?.

The sentence has been deleted.

Please advise if you require any further changes but hope and trust you consider it now ready for publication.

Yours sincerely,

Stephanie Veldhuijzen van Zanten, MD