Author's response to reviews

Title: Mental Health Outcomes of Mothers who Conceived using Fertility Treatment

Authors:

Nikolett L Raguz (nraguz@ucalgary.ca)
Sheila W McDonald (SheilaW.McDonald@albertahealthservices.ca)
Amy Metcalfe (amy.metcalfe@albertahealthservices.ca)
Candace O'Quinn (candace.o'quinn@albertahealthservices.ca)
Suzanne C Tough (suzanne.tough@albertahealthservices.ca)

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Author's response to reviews: see over
February 21, 2014

Dear Editor-in-Chief,

RE: (Manuscript Revision) MS: 8369978291014392 Mental Health Outcomes of Mothers who Conceived using Fertility Treatment: Nikolett Raguz MD, Sheila W. McDonald PhD, Amy Metcalfe PhD, Candace O’Quinn MD, Suzanne C. Tough PhD

We appreciate the reviewers’ comments and questions regarding the manuscript, “Mental Health Outcomes of Mothers who conceived using Fertility Treatment” and thank you for the opportunity to address these and submit the revised manuscript for your consideration. The specific responses to reviewer comments are contained below. I believe we have addressed the issues as well as possible. Thank you again for considering this manuscript for publication in Reproductive Health.

Sincerely,

Nikolett Raguz MD
Obstetrics and Gynecology Resident
University of Calgary
Response to Reviewer 1:

Thank you for these comments. After each comment we provide a response.

**Major Compulsory Revisions:**

1. Title needs to be clearer, rephrasing is required.

Response: Thank you for this comment. We do indeed examine some prenatal mental health outcomes as was as postpartum mental health outcomes, hence we have dropped Postpartum from the title.

2. Result section: Second paragraph needs further clarification.

Response: Thank you for this comment. We have addressed this in the text by elaborating the explanation of our results in this paragraph.

3. Discussion section: Last four sentences of first paragraph are confusing and needs clarification

Response: Thank you for this comment. We have reviewed this and have added text to improve the sentence structure to better convey the idea of the paragraph.

**Minor Essential Revisions**

1. The authors will need to review for sentence structure, grammatical and typing errors

Response: Thank you for this comment. We have reviewed our grammar in our manuscript.

**General comment:**

1. This can be a short communication after revision and not a full paper.

Response: Thank you for this comment. After discussion with our group, we feel that a short communication would not be sufficient to communicate our findings and we wish to keep the manuscript as a full paper.

Response to Reviewer 2:

Thank you for these comments. After each comment we provide a response.

**Major Compulsory Revisions:**

1. The primary outcomes and associated cut-off scores are entirely appropriate. However, for the secondary outcomes (Perceived Stress Scale and Parenting Morale Index), there appear to be no validated cut-off scores. It cannot be determined whether the cut-off scores used by the authors have any clinical validity. As such, I would strongly suggest analyzing these variables as continuous outcomes and testing for mean differences between groups.
Response: We thank the reviewer for bringing this important point to light. Although these two scales do not have established cut-offs as per the literature, we opted to dichotomize scores according to previously used percentiles (30th percentile for PMI and 80th percentile for PSS) in our work and in the literature for other symptom scales. These percentiles are commonly used to define those ‘at risk’ or those scoring within the excessive symptomatology range. In addition, treating these constructs as categorical aligned with how we defined our primary outcomes (depression and anxiety) in this study and facilitates interpretation. Furthermore, the distributions of these two secondary outcomes were skewed; although transformation improved their distribution, interpretability would not be improved using transformed scores. Of note, the same results were found using transformed scores.

2. I disagree with the authors’ statement that multivariable modelling was not warranted. Considering that age differed significantly between groups, and annual household income closely approached statistical significance, I believe that the findings would be more robust had both of these variables been adjusted for in the analysis.

Response: Thank you for this comment. We have removed this statement from the text to avoid confusion. Our sample size is too small to warrant multivariable model building and we now note in the text that further research and multivariable analyses are warranted with larger samples.

Minor Essential Revisions:
1. On page 6, please reword “previous mental health” to “prenatal mental health” for specificity.
2. Please describe the method of random selection for the comparison group.

Discretionary Revisions:
1. Based on the description of the recruitment process, the AOB cohort was recruited via convenience sampling. I think it would be appropriate to explicitly describe the sample as such.
2. It would be preferred to give the n for each reason for exclusion of the original 1654 participants to end up with the 1296 participants included in this analysis.
3. It is a common limitation of research in this area that different forms of fertility treatment are combined in the analysis, despite the fact that they may have differential impact on postpartum mental health. Perhaps this could be acknowledged in Limitations?

Response: Thank you for these comments. We have addressed the first two minor essential revisions in the text. The method of random selection for the comparison group was via a random number generator. We disagree that the AOB cohort was recruited via convenience sampling, and opt to describe the recruitment strategy in full. We have added numbers to address exclusion and have commented on the limitation due to combining fertility treatments in the Discussion.