Reviewer's report

Title: Equity in adherence to and effect of prenatal food and micronutrient supplementation on child mortality. Results from the MINIMat randomized trial, Bangladesh

Version: 1 Date: 31 March 2013

Reviewer: Malavika Subramanyam

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Major compulsory revisions

I commend the authors for the selection of this important topic. The data come from a well-designed randomized trial which significantly strengthens this manuscript. However, the manuscript needs significant revisions to improve clarity and flow. I fear that I have missed many points while reading this manuscript just because of the poor readability and flow.

All of my comments listed below are what I would consider compulsory, whether major or not.

1. “Other efforts may show variation in equity effects in different settings due to design as well as the historical and political trajectories of the local health system.” – Need some explanation. What do you mean by “different settings”, “design”, “historical and political trajectories of the local health system”?

2. “It is therefore relevant to examine large interventions targeted to populations in low-income countries.” Relevant to examine which aspects of the large interventions being referred to here? I can guess, but it might help to be explicit.

3. The methods section needs to be re-organized to present information in a more linear manner. I had to keep scrolling up and down to find the information I wanted. More sub-headings would help, perhaps something such as: study sample, outcome variables (number of variables, how data collected, how data operationalized in analyses), predictor variables (number of variables, how data collected, how data operationalized in analyses), descriptive statistics, univariate analysis, multivariable analysis.

4. Please mention the number of women who were recruited to this study either towards the end of the paragraph on design, or in the next paragraph, the one on study site participants.

5. Please spell out abbreviations at first instance of their use.

6. I understand that details of the MINIMat study have been previously reported. However, it will be helpful to readers of the current study to be able to learn some basic information regarding MINIMat in the current article itself, instead of having to look up the referenced article. For instance, a single sentence about the aim of
the MINIMat study and the study population will be helpful.

7. “A birth notification system was established to ensure that study staff was made aware of births as soon as they occurred.” – How did this system work? Have the details of this system been published previously? Please cite the reference if they have been previously published. Even if previously published, a sentence or two describing how this worked would be helpful.

8. What was the reasoning behind dichotomizing maternal education and household asset score? Please include the rationale behind this decision in the manuscript.

9. “Information on infant and child mortality was collected at follow-up visits at 7-12 day postpartum, and at monthly visits during infancy. Community health research workers also collected information on child survival on a monthly basis as part of the routine surveillance system in Matlab. These workers visited households and collected information on vital events like births, deaths, and migration.” Who are the persons who collected the information referred to in the first sentence on infancy? Are they different from the community health research workers referred to in the second sentence? If so, how are they different?

10. Also, how was mortality data on children aged 1 to 5 years collected?

11. “Baseline characteristics between trial arms were evaluated by student’s t test, or Bonferroni adjusted post hoc ANOVA for continuous variables and chi square test for categorical variables.” The continuous and categorical variables referred to in this sentence, are they the outcome variables? If so, it might be better to say so. For instance, “Baseline characteristics between trial arms were evaluated by student’s t test, or Bonferroni adjusted post hoc ANOVA for continuous outcomes and chi square test for categorical outcomes” is clearer.

12. “The women having less schooling were in general from families having lower mean asset scores (-1.23 vs. 1.36, p<0.001), more frequent deficits in a scale for income expenditure status (p<0.001), and more frequent presence of daily wager in the family (p<0.001).” This is the first mention of two new socioeconomic variables: income expenditure status and presence of daily wager in the family. Please introduce these variables in the methods section with details on how these data were collected and how they were operationalized in the analyses. It might be worth letting the readers know in the introduction itself that 4 and not 2 socioeconomic variables were used in this paper.

13. Please mention that all analyses were Intent To Treat analyses in the methods section itself.

14. Recommend changing “The baseline characteristics between trial arms were comparable indicating efficient randomization” to “The baseline characteristics between trial arms were comparable on X, Y and Z, suggesting efficient randomization.”

15. “Women having <6 years of schooling adhered more to food (83 vs. 68
packets, \( P<0.001 \) but less to micronutrient supplementation \( (105 \text{ vs. } 119 \text{ capsules, } P<0.001) \) than women having more schooling.” In this sentence it is not clear which randomization group the women having more schooling belonged to.

16. Please structure the results such that the two groups being compared differ only on one aspect. For instance, when comparing consumption of food supplements in low educated women with that in higher educated women, it helps if the micronutrient intake etc is the same between the two groups. Perhaps some of the comparisons discussed are indeed in this form. But not all. Currently too many comparisons are presented without organizing them in a manner that makes it easy for the reader.

17. Please re-organize the discussion such that points about each outcome variable are addressed in an orderly fashion. Perhaps this is has been attempted. But currently, it is not very clear, and puts the burden of reading and re-reading and scrolling up and down on me. The manuscript suffers from lack of an easy flow to make it more reader-friendly. There are 6 different groups to be compared, and the addition of the socioeconomic variables makes it even more complex to follow.

18. “A lower adherence to micronutrient supplements was observed among women with less schooling. This is consistent with the findings from a previous iron supplementation study in Bangladesh [19] and from a study among female garment employees in Cambodia [20]. A possible explanation may be that women having more schooling regarded capsules as indicative of modern care, while women with less schooling did not share that view and were also not aware of the added advantages of the tablets. A study in Vietnam reported concern for newborn health as a significant reason to comply with iron folic acid supplements [21]. Because of similar reasons probably women in our study adhered with micronutrient tablets but the differences between less and more educated women were not significant since concern for newborn health is a unique phenomenon as women perceive [22], and all women were equally worried for that.” It seems to me that the first sentence and the last sentence in this paragraph are not congruent.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.