Reviewer’s report

Title: Folate, vitamin B12, ferritin and haemoglobin levels among women of childbearing age from a rural district in South India

Version: 0 Date: 25 Apr 2017

Reviewer: Shristi Rawal

Reviewer's report:

This study looked at the prevalence of folate, vitamin B12 and iron deficiency among women of child bearing age from a rural district in South India. The research question is important from a public health point of view. However, several major issues need to be addressed in this manuscript:

Major comments:

The novelty of the study is not clear. Please discuss the critical literature knowledge gaps. How does this study make a unique contribution compared to other studies that have looked at the prevalence of these micronutrient deficiencies in other parts of South India?

Folate levels decline with pregnancy as noted in the introduction, so it is unusual that this study found higher folate levels among pregnant women. Possible explanations should be discussed in the manuscript. Not using trimester specific reference range for serum folate should be discussed as a limitation.

The finding that ferritin levels were not associated with pregnancy is also unusual. We would expect ferritin levels to be lower among pregnant women as iron demands increase during pregnancy. Do you have data on gestational age at the time of blood collection? It would be also helpful to discuss the limitations of interpreting ferritin without accounting for inflammation levels. May be interesting to look at ferritin levels stratified by BMI status.

Please discuss some of the the potential reasons why the proportion of folic acid deficiency is so high in this population compared to other parts of India.

Language assistance is recommended. There were quite a few typos, grammatical errors and unclear sentences.
Minor comments:

The introduction could elaborate more on the biological roles of the studied micronutrients in pregnancy.

Methods: line 37-40 more suited in introduction or discussion?

Methods, Study population: Line 50-55, do you mean all were eligible instead of all were included?

Sampling: How many women were approached, how many agreed to participate? Definition of seriously ill?

Statistical analysis: how did you account for the sampling design?

Statistical analysis: need to mention here that the cut-offs were based on WHO recommendations

Statistical analysis: multivariate or multivariable linear regression?

Results: The authors can avoid redundancy by not describing everything in Table 1. Instead, discuss the overall trend or interesting finding e.g., which micronutrient deficiency had the highest proportion?

Results: In table 1, how come n for parity 0 is 444 whereas n for no birth is 439 for age at first child-birth.

Table 2: combine mean and 95% CI into one column, same for median and deficiency %

Results: seems only the median is lower than WHO cut-offs for folic acid, not mean?

Table 3: why not do ANOVA or similar test to see whether there were significant differences by age, parity, pregnancy/breastfeeding status. Can also look at BMI?

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Unable to assess

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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