Reviewer's report

Title: Does prenatal micronutrient supplementation improve children's mental development? A systematic review

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Reviewer: Nicholas Embleton

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Does prenatal micronutrient supplementation improve children's mental development? A systematic review

This is a well conducted systematic review examining the evidence for a benefit on children's mental development from prenatal micronutrient supplementation. The methodology is appropriate and adequately described. It is a useful paper and will be of interest to obstetric, reproductive health, primary care and paediatrics.

The authors highlight the limited data that is available, and point out the focus of this review i.e. they were specifically not examining effects on other outcomes such as pregnancy outcome and physical development. There was significant heterogeneity in individual studies, supplement and population group. Most studies’ methodology was poor-moderate. Differences in population and background levels of dietary intake or levels makes meta-analysis impossible. Length of follow up was often too short to reach meaningful conclusions. Most studies had problems with compliance and contamination.

I would not recommend any major revisions necessary. A few points:

1) It might be worth further highlighting the issue of a single nutrient study using a pharmaceutical RCT approach - that might not be adequate where nutrient deficiencies often co-exist, and where individual supplementation might not result in benefit in absence of co-factors etc.

2) The search criteria restricted to English language articles. This might be a major limitation if it were shown to exclude significant studies. Many studies may have been conducted in areas where background dietary or serum levels were low, but published in other languages. Is it possible to get a feel for whether any such studies exist?

The text is well written, good grammar and lay out. The supplemental appendices are useful and concise.

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