Author's response to reviews

Title: Burden of micronutrient deficiencies by socio-economic strata in children aged 6 months to 5 years in the Philippines

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Author's response to reviews: see over
Responses to reviewers COI of MNDs in PH – 2nd revision

**General response to reviewers:** Thank you very much for the thorough review of our work, your valuable comments and the support with additional literature to improve the text!

<table>
<thead>
<tr>
<th>Rev-Nr</th>
<th>Comment by reviewer</th>
<th>Response by authors</th>
<th>changes in text (new text in blue)</th>
</tr>
</thead>
</table>
| 19     | If the concept of "quality of life lost" is easier to understand, the authors could have used QALYs and not DALYs for their study in the first place. However, given that the paper uses DALYs, it is confusing - if not misleading - to speak of "quality of life lost" when referring to DALYs. And while it is true that the concepts are very similar, they are the inverse of each other (one DALY lost is one QALY gained) and the underlying ideas are also different (quality vs. disability), i.e. for a rigorous and unequivocal presentation, the concepts need to be distinguished. (The authors certainly do not need to use the language I had suggested in my original comment, but they should avoid the term "quality of life"). | You are right. It may be confusing to calculate DALYs and contemporaneously use the term quality of life lost. We thus now use the term “life years lived with disability” used in the Global Burden of Disease study instead of the term “quality of life”.                           | on page 3: … and “burden-of-disease studies” when they focus on its human costs in terms of years lived with disability and years of life lost.  
and on page 5: Figure 1 adapted.                                                                                     |
<p>| 25     | In my original comment I asked the authors when intakes are sufficient, or when children to not have a lack of MN: In the literature there are various dietary reference intakes, such as RDAs or EARs, and it is not clear to the reader which of these the authors use to determine that children's intakes of MNs are sufficient. (RDA = intakes at which 90% of target population is sufficient, EAR = intake at which 50% of target population is sufficient.) | Your comment refers to the approach we chose in order to assign health consequences to MNDs. We assume that these health consequences correspond to the difference in health outcomes between the intervention group and the control group in MN supplementation trials.  It appears plausible that supplementation trials are designed in such way that the intervention group receives the amount deemed to be sufficient to fill the MN-gap in terms of adequate intake. The risk of too high MN-intake is relatively low in a supplementation trial. This may be different in a fortification trial, as the amount of fortified food consumed by some recipients may be substantial and thus dosage must be lower than in supplementation. The amount of MNs provided per recipient in a fortification trial is thus likely to be lower than in supplementation trial.  We reformulated our statement in order to clarify this point. | on page 8:  We assume that MN supplementation trials were designed to fill the gap of MN intake (e.g. in terms of adequate intake) due to the insufficient diet of the children and thus eliminate all the adverse health consequences of MNDs, an approach also applied in previous research [1]. |</p>
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment</th>
<th>Response</th>
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<tbody>
<tr>
<td>38</td>
<td>S_MCR7</td>
<td>You are right. We now clearly state the source of this information.</td>
</tr>
<tr>
<td>40</td>
<td>S_MCR9</td>
<td>In order to avoid confusion, we have added a sentence at the beginning of the methods section on page 5 that states that costs are only included if their causes lies in MNDs in early childhood.</td>
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<tr>
<td>6</td>
<td>H_6</td>
<td>Thank you for the helpful compilation of effect sizes you provided us with. We have decided to base our estimate on one of the studies you provided [2]. In our opinion this study seemed to be the best estimate based on estimation procedure and data. As you mentioned this leads to a significantly higher effect than the values we applied up to now. We add a sentence on the wide range of parameters discussed in the literature. We also adapt the discussion, as ZnD now has a higher impact on the results.</td>
</tr>
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On page 14:

We exclude xerophthalmia and blindness, because these consequences of severe VAD are no longer observed in the Philippines (expert knowledge of authors affiliated to Philippines Food and Nutrition Research Institute).

On page 5:

Costs of MNDs in adulthood are only considered if they are the consequences of childhood micronutrient malnutrition.

On page 15:

The estimated effect of stunting on adult wage varies widely with an additional centimetre of adult height leading to an increase in wages between 0.86% and 15.8% [3]. We base our estimate on Gao and Smyth [2] which use more recent data than other studies [3] and implement a validated estimation strategy [4].

And on page 16:

The main cost-effect of ZnD is on future production losses due to stunting which amount to 28% of total production losses.
should at minimum be considered in the sensitivity analysis

Literature