Reviewer’s report

Title: Analysis of nutritional adequacy of local foods for meeting dietary requirements of children aged 6-23 months in rural central Tanzania

Version: 0 Date: 29 May 2017

Reviewer: Andre Briend

Reviewer's report:

Major comment:

This is an interesting study with important practical implications. The conclusion about the difficulty of providing all needed nutrients to children in poor countries is certainly valid, but the case would have been stronger, had the authors used a more up to date method to assess feasibility of covering all nutritional requirements with local food using a linear programming based method. The method used in this paper, based on the comparison one by one of the nutrient density of each nutrient to the density recommended in the 1998 WHO document has some weakness. It assesses the possibility of providing the recommended intake for each nutrient separately, whereas they all need to be provided together which is even more difficult. The feasibility to provide all needed nutrients together should be assessed by using a linear programming based approach as described in several articles quoted in the reference list, in particular ref. 4. Also these methods allow testing alternative diets which remain within acceptable limits, in terms of cost and food habits, which was not done either in this study. Or maybe the authors plan to examine the feasibility of providing all needed nutrients by changing dietary habits in a further paper? In any case, the difficulty of providing all needed nutrients described in this paper is real and using a linear programming approach would show that it is even more difficult than shown in this paper.

This study confirms several other studies which reached the same conclusion. In this regard, the sentence P 4 line 60 should be qualified. It says:

"Some countries like Burkina Faso, Indonesia, Bangladesh, Ethiopia and Viet Nam have implemented the approach and revealed that locally available foods can provide adequate nutrition to children at nutritional risk [13-15]."

Ref 13 found that diets prepared with local foods which could provide all nutrients needed by children aged 6-8 months were unrealistic and highlighted the difficulty of relying on local foods alone.

Ref 14 showed that even after optimising food based recommendations, intake of several key nutrients remained below optimal levels.
Ref 15 showed it was impossible to reach recommended levels of intake for children aged 9-23 months without using fortified flour.

So this sentence is not correct and should be rewritten. As far as I now, no study in a poor country ever showed that it was possible to provide all nutrients together with locally available non fortified food during the complementary feeding period. Even in industrialised countries with access to a large variety of food, iron intake is often inadequate and iron deficiency was largely eliminated with the use of iron supplements or of iron fortified infant formula or complementary foods.

It is not clear why a market survey was done as the collected prices were not used in the analysis.

Minor comments

P 4 line 51

"…and perform poorly than their…”

Edit: …and perform more poorly than their…

P 7 lines 121-3. Clarify if WHO growth standards where used to calculate anthropometric indices

P 7 line 127 WHO standards are standards, not reference. Edit as follows:

"based on the World Health Organization's growth standards"

P 7

"Dietary data were collected using 24-hour dietary recalls, weighed dietary record (WRD) and 5 days food records described in previous studies [17,20,23]. The WDR method was used to collect data on food consumption for 7 days, whereas, 24-hour dietary recalls and 5-day food records were used to describe food consumption patterns in 7 days".

Not clear. Weighed dietary record should be WDR (and not WRD). The sentence suggests that weighed dietary record was taken for 7 days, in which case, not clear why 5-day record was also used.

P 9 line 179
The document quoted in ref. 28 giving recommended nutrient intakes for young children is nearly 20 years old. More recent documents should be used. See:

http://www.who.int/nutrition/publications/nutrientrequirements/WHO_TRS_935/en/

http://www.who.int/nutrition/publications/nutrientrequirements/9251052123/en /

http://apps.who.int/iris/bitstream/10665/42716/1/9241546123.pdf

Arguably, changes compared to the 1998 document are minor and will not alter the general results.

P 16 line 307

The reference 33 refers to a FAO WHO document on recommended protein intake, not energy.

P 16 line 314

"The association between overconsumption of carbohydrate rich foods with the occurrence of childhood and adult overweight and obesity has been clearly evaluated in a previous study (34)"

Reference 34 mentions the probable causal link between high intake of sugar sweetened soft drinks and fruit juices, but says nothing about the association between overall carbohydrate intake and later risk of obesity. To my knowledge, this is not really established. Delete.

P 16 line 328

Key references about the possible relationship between amino acid intake and the risk of stunting should be quoted. For instance:


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