Author's response to reviews

Title: Food sources of energy and nutrients in the diets of infants and toddlers in urban areas of China, based on one 24-hour dietary recall

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Author's response to reviews: see over
Dear editors and reviewers,

Many thanks for the comments and suggestions to our manuscript. We have now done the revision and addressed all questions and concerns from the report of referee 1. Please find below the point by point response and description of the changes made. No response is needed for the report of referee 2.

Yours sincerely

Liya Denney

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Report of Referee 1

This paper describes a cross sectional analysis of energy and nutrients consumed amongst infants and toddlers in urban areas of China, using a one 24 hour dietary recall. The paper is novel in as much as there is a paucity of information on the dietary consumption amongst this age group in China, as such this is a valuable piece of research and provides insight in the dietary habits of young children in a rapidly changing population.

Minor essential revisions

To strengthen the paper the methods require further brief details i.e. the development of sample weights, the adjustment for over sampling, nonresponse and undercoverage amongst some of the groups.

Response

This study design was a random sample from Maternal and Child Care Centres in 8 geographically diverse cities in China. The sample size calculated was fixed for each of the 3 age groups (6-11, 12-23 and 24-35 months) in each city. A sentence has been added to explain further the sampling on page 2, lines 2-4:

“Subjects were recruited randomly based on the child registration list in each of the Maternal and Child Care Centers (two in each city) until the target number was reached.”

Since this was not a nationally representative study, adjustments to the sample were not done. A sentence has been added to the Limitations indicating this on page 14, line 11:

“Therefore, sample weights or other sampling adjustments were not applied.”

In addition, detailed information about subject recruitment can be found in the companion paper to this one, MS1094924401701432 (Nutrient intakes of infants and toddlers from maternal and child care centers in urban areas of China, based on one 24-hour dietary recall), which was submitted together with this manuscript.

What dietary reference values were used and how were these divided?

Response

Nutrient adequacy was not addressed in this paper. However, it is the topic of the companion paper, MS1094924401701432 (Nutrient intakes of infants and toddlers from maternal and child care centers in urban areas of China, based on one 24-hour dietary recall). In that paper, nutrients were assessed by comparing intakes to the recommended dietary intake from the Chinese Nutrition Society 2013 (Chinese Nutrition Society. Chinese Dietary Reference Intakes Handbook 2013. Beijing: China Standard Press, 2014). The
recommendations for infants and toddlers were divided according to ages 0-4, 5-11, 12-23 and 24-35 months. Since only one day 24-hour recall was collected in our study, nutrient intake assessments were done by comparing mean intakes with the Adequate Intake (AI). A population group with a mean nutrient intake at or above the AI can be assumed to have nutritional adequate diets.

**How were the volunteers trained and what was used for reporting portions sizes and was training provided?**

**Response**
Volunteers were interviewed by trained interviewers (page 4, lines 14-15). Details about the estimation of portion sizes have been added to the text on page 4, lines 16-20:

“Portions were estimated using measurement aids (including spoons, cups and bowls) and a picture booklet of common foods consumed in China (designed for national nutrition survey by the Centre of Disease Control in China). The information collected was then converted to weight in grams using a portion to weight conversion list for common foods.”

**The use of vitamin supplements is reported but there is no mention of how this data was collected.**

**Response**
Information about supplement use has been added on page 4, lines 21-26:

“Use of nutrient supplements was also collected during the face-to-face interview with the primary caregiver as part of a general questionnaire. A list of dietary supplements commonly used in China was used to code the supplement(s) reported. The primary caregiver was also encouraged to bring the packing of the nutrient supplement to the interviewer. The information collected included the name and brand of the supplement, age when supplement was first given and the amount used.”

**Macro & micronutrients**
These could should be split into milk and non-milk sources and it would be useful to describe these according to the different age categories within the text, especially as infant / breast milk is the principle source of macro & micronutrients at 6 - 11 months of age, whereas at 24 - 35 months of age milk only represents 8% of the source of fat, 3% of the source of carbohydrate and 7% of the source of protein.

**Response**
The manuscript describes the top/core foods of this population by listing the sources of energy and nutrients in descending order of contribution of all foods in three age groups. In this way, we can see food patterns and relative importance of a specific food or food group.

We would like to point out that milk (unfortified) is not a key food source of any nutrients. Rather, breast milk/infant formula and growing-up milk were the significant sources of energy and nutrients among infants and toddlers, respectively. The contribution from milk (unfortified) is much lower on the list for most nutrients. The tables and text has been arranged and described according to age. However, to show age related changes in the contribution from milk and milk products, all milk sources are now highlighted (shaded) in Tables 2-14.

**Carbohydrates**
The addition of fibre would be valuable and a table outlining the source of fibre should be added.

Response
Table 5 Sources of fibre and comments in the text on page 8, lines 8-14 have been added.

Fats
It would be ideal to break these down into total fat, saturated and cholesterol as described by the authors in other similar work. A table including the sources of saturated fats would be of value.

Response
At present, saturated fat values are not available from the China Food Composition tables, therefore sources of saturated fats cannot be estimated. For cholesterol, a sentence has been added on page 8, lines 22-24:

“Cholesterol is not a concern among children in these age groups; however, top sources of cholesterol in the diet were eggs, fish/shellfish/shrimps and pork.”

Micronutrient intakes:
It would be useful for the authors to make reference to other studies of micronutrient intake amongst young children in China as by way of a comparison to their findings. Public Health Nutr. 2014 Nov;17(11):2605-18. doi:10.1017/S1368980013002978. The phenomenon of micronutrient deficiency among children in China: a systematic review of the literature. Wong AY1, Chan EW1, Chui CS1, Sutcliffe AG2, Wong IC1.

Response
Thanks for recommending the reference, which is indeed a valuable publication on micronutrient deficiency among children in China. This reference together with commentary in text has been added on page 11, lines 24-26:

“A recent review reported that anaemia prevalence of children under 5 years old in China was 11.3% in 2005 [19] and the peak of anaemia prevalence was between infants aged 6-12 months [20]."

and also on page 13, lines 2-4: “Indeed, although subclinical vitamin A deficiency has decreased from 40% to less than 10% from 1988 to 2009 but prevalence of marginal vitamin A deficiency (serum retinol level 0.70-1.05 µmol/l) was still 20% to 45% [19].”

Referencing
page 19: line 3 - although supplements may be beneficial to prevent deficiencies?

Response
Reference 21 (Siega-Riz et al. “Effect of supplementation with a lipid-based nutrient supplement on the micronutrient status of children aged 6-18 months living in the rural region of Intibuca, Honduras) has been added on page 13, line 23.

page 19 line 17 - a reference needs to be added for “infancy and early childhood periods are critical periods for forming lifelong dietary habits.”

Response
Reference 27 (Mikkila et al. Consistent dietary patterns identified from childhood to adulthood: the cardiovascular risk in Young Finns Study) has been added on page 13, line 21.