Author's response to reviews

Title: Infant feeding practices among HIV exposed infants using summary index in Sidama Zone, Southern Ethiopia: A cross sectional study

Authors:
Demewoz Haile Mr (demewozhaile@yahoo.com)
Tefera Belachew professor (teferabelachew@gmail.com)
Getenesh Birhanu Mrs (geteneshbt@yahoo.com)
Tesfaye Setegn Mr (tesfmengsetegn@gmail.com)
Sibhatu Biadgilign Mr (sibhatu2005@yahoo.com)

Version: 2 Date: 2 January 2014

Author's response to reviews: see over
Point by point response for reviewers

Title: Infant feeding practices among HIV exposed infants using summary index in Sidama Zone, Southern Ethiopia: A cross sectional study

Reviewer: Rose Zulliger

Major Compulsory Revisions

Comments #1: The manuscript is readable, but it would benefit from additional English review to enhance clarity. For example, the sentence “The intersecting effect of inappropriate feeding practice among HIV exposed infants followed by malnutrition has been resulted a significant increase in child mortality after 6months of age (9).” contains various grammatical errors, as do many other sentences. This could be revised as, “The intersecting effect of inappropriate feeding practices among HIV exposed infants followed by malnutrition has been resulted in a significant increase in child mortality after 6 months of age (9).

Response #1: Comment accepted and modified accordingly. We will remain intact to revise and correct English errors still.

Comments #2: Please provide additional information on data collection. How were infant-mother pairs selected from within the clinics? What was the refusal rate? Were there any eligibility criteria? Were the health professionals that collected the data recruited from the sampled clinics? If so, please discuss any biases this may have introduced within the discussion section (Methodology paragraph 2).

Response #2: All HIV exposed infants with their mothers were found in the randomly selected health institutions were recruited. Actually there were exclusion and inclusion criterias such as presence of physical deformation, critical illness of infant or mother, infant should be HIV exposed and age of the infant(6-17 months). We did not find any mother who refuses for the data collection. This might be due to the data collection was made by the health professionals recruited from the health institutions. To decrease the bias introduced by the data collectors, we remove all the questions which are related with the responsibility of the health professionals. We try to put the bias on the limitation of the study.
**Comment ≠ 3:** An important component of the WHO feeding recommendations is the use of antiretroviral therapy, but the manuscript does not currently provide information on the national PMTCT strategy or implementation. This is important contextual information. Please describe the current PMTCT strategy and any relevant information about its application within South Ethiopia. What percentage of the included mothers were on ART and what percentage of the included infants were currently on ART and were ever exposed to PMTCT? What percentage of the children were HIV-infected? What was the association of the index with these important HIV-related factors? Given that this is the first use of the CS-ICFI in HIV-exposed infants, this is critical information for determining its utility within the study population and for informing its future use.

**Response ≠ 3:** Comment accepted and revised the manuscript accordingly. We put the national recommendation in the introduction. We summarize the association between HIV related maternal characteristics and CS-ICFI. All children were HIV exposed and we exclude HIV infected children from the study. This comment is well taken and accepted. We include the percentage of mothers who were on ART and on pre-ART. However all the infants were HIV exposed and all were on cotrimoxazole prophylaxis. Some of the infants were HIV negative and at risk of getting HIV while the remaining were not tested and not declared as negative or positive. We were interested to know the importance of the CS-ICFI in HIV exposed infants.

**Minor Essential Revisions**

**Comment ≠ 4:** Please ensure consistency in rounding throughout the manuscript. For example, some percentages in the abstract are rounded to the nearest percent whereas others are rounded to the nearest tenth of a percent.

**Response ≠ 4:** Comment accepted and revised to the nearest percentages

**Comment ≠5:** Please also check for consistent use of punctuation. Some sentences have a space in between the end of the sentence and the reference while others do not. “During the period of transition from exclusive breast feeding to complementary feeding, malnutrition rate increases which might be partly due to inappropriate feeding practices(5). As evidenced by several studies weight and height gain during the period of infancy are influenced by infant feeding practices (6-8).
Response #5: Comment accepted and manuscript modified accordingly

Comment #6: World Health Organization should be capitalized (Introduction paragraph 1 & Methodology paragraph 4)

Response #6: Comment accepted

Comment #7: Please define the following terms the first time that they are used in the body of the manuscript: ICFI (Introduction paragraph 4); ART and PMTCT (Methodology paragraph 2); CS-ICFI (Methodology paragraph 3); SD (Methodology paragraph 4)

Response #7: comment accepted and modified accordingly

Comment #8: Please either explains what Enset and kocho are or remove reference to them since most readers will not be familiar with these terms (Methodology paragraph1)

Response #8: it is accepted and modified as Enset' (false Banana). The staple foods in Sidama Zone are maize and kocho (17). Kocho is bulky, chewy, fermented starch bread which is made from a mixture of the decorticated leaf sheaths and grated root.

Comment #9: How were the categories determined for the CS-ICFI? Was this by expert opinion or exploratory analysis of the distribution of scores (Methodology paragraph 3)?

Response #9: The CS-ICFI was divided into 3 categories based as closely as possible on tertiles with all age groups together. This is done based on the recommendation of the previous researchers. We use the general guideline of Arimond and Ruel who first develop this index which says “minimize the differences between actual percentages and 33 percent; when a choice is necessary, lump into the middle category so as not to dilute the contrast between the extremes.

Comment #10: You have done a nice job with your tables and with your description of the internal consistency of the scale. The 95% confidence intervals are highly informative for readers so please include them in Table 5.

Response #10: Comment accepted and modified accordingly. The 95% CI is described in the result. The CS-ICFI internal consistency was good among infants aged 9–11 months $\alpha=0.70$ (95%CI: 0.49-0.80) and aged 12–17 months $\alpha=0.71$ (95% CI: 0.55-0.78), and it was lower among infants aged 6–8 months $\alpha=0.68$ (95% CI: 0.54-0.77)
Comment #11: The labels for your figures do not seem to match up and the numbers do not seem to match the descriptions in the manuscript. Figure 2 is confusing and does not seem to depict the “Distribution of CS-ICFI tertiles by place of residence”.

Response #11: we authors would like to say a great excuse for the mistake we done on the title of the figures. We exchange the title legends of Fig 1 and Fig 2. We corrected accordingly.

Comment #12: The discussion section provides a nice description of the internal consistency of the index and of how the study results relate to other application of the index. The long list of discrepant findings between the various studies does, however, make it difficult for the reader to make sense of the findings. Currently, the key messages and implications of the study are not clearly described.

Response #12: Comment accepted and we try to put the implications. It is highlighted in the discussion

Comment #13: The authors highlight the finding that there is a statistically significant difference in CS-ICFI for the different age groups, but the significance of this finding is unclear since the scoring of the scale was different for each group. We are unable to determine whether this difference represents a true difference in nutritional status at different ages or whether it is an effect of the scoring system. This should be noted within the limitations.

Response #13: Even though the value given for the index components were different for the different age groups the maximum as well as the minimum for each group is equal. When the components of the index were valued during scoring, we consider the importance of that feeding practice for that specific age group (Table 1). The authors believe that the significant difference in CS-ICFI for the different age groups resulted from the true difference of the index not due to the scoring system. The presence of statistically significant difference in mean of the index between the age groups indicate which group of the age has low optimum feeding practices and should be the target of the intervention.

Responses for Reviewer: Xiaoyang Sheng

Comment #1: The infant/child feeding index created in this study consists of both feeding behavior and diet quality which are different from previous studies; more explanations on components of modified ICFI especially on feeding behavior are needed in methods and discussion although the internal consistency of ICFI has been evaluated. For example, it is not
clear to me why “hand washing before cooking” and “hand washing before feeding” were used as components of ICFI which seem to be irrelevant to the growth of infants/children.

**Response #1:** The components of the index were selected to address the major concerns during complementary feeding. One of the major causes of malnutrition especially after 6 months of age in developing countries like Ethiopia is infection due to unhygienic general/feeding practices. That is the reason why we concerned about the issue of hygiene during complementary feeding and included as one important component.

**Comment #2:** More details on study procedures is needed, including eligibility criteria and exclusion criteria, number of children/parents met the eligibility criteria, number of refusals, reasons for refusals, etc. These need to be presented in the methods.

**Response #2:** The comment is accepted and modified accordingly in the method part. The eligibility criterias to part of this study are age (6-17 months), HIV exposed (HIV negative as well HIV positive infants were excluded) and those infants who have no serious illness that required regular hospitalization. There were no refusals during data collection. But due to missing values on some important variables of the index, the analysis was done on 175 infants only.

**Comment #3:** If anthropometrics including weight and length of infants were measured, the methods for obtaining these should be illustrated. Did any reliability testing or quality control of measurements occur? I also want to know the mean WAZ, LAZ and WLZ of all infants, the mean WAZ, LAZ and WLZ of rural or urban infants, the differences in mean WAZ, LAZ and WLZ between rural and urban infants, and the proportion of wasting, underweight and stunting.

**Response #3:** Comment accepted and modified accordingly. It is heighted in the method part about the anthropometric measurement. The finding about the nutritional status of HIV exposed infants is described in the result section as” About forty two (23.7%) of the HIV exposed infants were stunted and 27 (15.3%) were underweight while 23 (13.5%) were wasted. The mean WLZ, LAZ and WAZ was -0.19, -0.86, and -0.72, respectively. “

**Comment #4:** The discussion section is weak in its current form. The authors need to discuss the implications of modified ICFI adapted to the local context which included such feeding behaviors as it is an innovative aspect of this work, attempt to explain why mean ICFI is
significantly different among age groups, and why ICFI is related to WAZ in their study and not other studies.

**Response #4**: comment accepted. There was contrasting findings about the association between ICFI and WAZ in many previous studies which is similarly reflected in our study.

**Minor essential revisions**

**Comment #5**: 1. In methodology, “The CS-ICFI” was developed with value 0-13 and it was divided into 3 categories as…” Is it based on tertiles?

**Response #5**: It is based on tertiles and explained in the method part.

**Comment #6**: In result, “A total of 184 HIV positive mothers having HIV exposed infants of age 6-17 were included in the study”. The “age 6-17” should be “aged 6-17 months”.

**Response #6**: Comment accepted and modified accordingly

**Comment #7**: In result, the number of infants having ICFI should be presented. It is better to show the statistical value of difference in mean CS-ICFI among age groups besides P value. Similarly, please provide the statistical value of difference in mean CS-ICFI between urban and rural infants, and standard deviation of mean CS-ICFI. There is a mistake in serial number of the two figures.

**Response #7**: Even though, there were totally 184 HIV exposed infants participated in the study, only 175 had the index because of missing values in the index components. It is described in the second table which presented about the reliability of the index. The serial number of the figures is corrected.

**Comment #8**: In section of “Association between nutritional status and CS-ICFI”, which potential confounders were controlled when the statistical association between CS-ICFI and WAZ was determined?

**Response #8**: Diarrhea morbidity in the last two weeks is found as a potential confounder in the statistically analysis. It was controlled in the multivariable analysis.

**Comment 9**: In section of discussion, “This indicated that breast feeding and bottle feeding showed week or negative correlation…” , the word “week” should be “weak”.

**Response 9**: It is corrected and modified accordingly.

**Reviewer: Huan Zeng**

**Comment #1**: Last paragraph of introduction
“So far ICFI has only been used in African; Asian and Latin American countries among HIV unexposed children. The application of this summary index for assessing feeding practices of HIV exposed infants is not known in Ethiopia by considering the current recommendation for HIV exposed infants. ”Here it seems like that the study focus on use of ICFI among HIV-exposed infants, but actually, the study assesses CS ICFI. What is the ICFI, what is the CS-ICFI, there need be more introduction in Methods.

Response ≠1: The comment is appreciated. ICFI is a summary index that measures the caregiver’s feeding behaviors and the infant and young child’s diet quality and quantity. It can be cross-sectional (CS-ICFI) and longitudinal (L-ICFI). This manuscript is about the use of CS-ICFI.

Comment ≠2: Methods: What are the recruitment criteria for the target population? How to recruit them?
Response ≠2: The eligibility criteria to this study were age (6-17 months), HIV exposed (HIV negative as well HIV positive infants were excluded) and those infants who have no serious illness that required regular hospitalization. All the study subjects who fulfill those inclusion criteria found in the selected health institutions were included in the study.

Comment ≠3: “However four health institutions were excluded because they had no eligible study subjects for this study”. Why they are not eligible?
Response ≠3: The health institutions were eligible for the study however they had no eligible study subjects. That is why we exclude them from the study during sampling.

Comment ≠4: “A total of 184 HIV exposed infant-mother pairs were included in the study”. How about the proportion of these infant-mother pairs? (The same question: what is the total number of infant-mother pairs in this area?”). Representative?
Response ≠4: Totally in the health institution there were about 324 infant mother pairs who fulfill the inclusion criteria of this study. This study included above 50 % of the total study subjects which is actually representative. But representativeness could not be ensured only by sample size. The sampling procedure is a critical issue to be considered. We employed the cluster sampling as a sampling procedure and all the study subjects found in randomly selected health institutions were included.

Comment ≠5: Need more introductions about the structured questionnaire? How to develop? How about the items?
Response #5: The questionnaire is adapted from the DHS and national nutrition program questionnaire and modified according to the study objectives. Structured questionnaire is a questionnaire that the study subjects are administered to questions which have specific choices and the same structural order for all respondents.

Comment #6: Can the feeding practices be fully assessed by the qualitative 24 recall method and 7 day quasi food group frequency? Why?

Response #6: Yes. The study used qualitative 24 recall method and 7 day quasi food group frequency assessing feeding practices. The qualitative 24 recall method is used to assess the current feeding practices. However to overcome the limitation of the 24 recall method, the study used 7 day quasi food group frequency. The reason why this study used qualitative 24 recall rather than the 24 recall quantitative method is because the study was conducted in the health institutions. However 24 recall quantitative methods should be made in respondents home to facilitate brief recall. In addition to this, the study done by Rosalind Gibson in 2011 showed that 24 recall quantitative method is not the valid measure of nutrient intake in Southern Ethiopia, Sidama.

Comment #7: “Health professionals were recruited and trained for two days on data collection techniques.” Need more introductions

Response #7: comment accepted

Comment #8: “The 24 hour dietary diversity score is a sum score of: Grains + Tubers + Milk +Vitamin A-rich fruits/vegetables + other” What is the reference?

Response #8: This is done based on the WHO food group classification during complementary feeding

Comment #9: The aim of the study “Therefore, the objective of this study is to assess the infant feeding practices of HIV exposed infants using summary index and its association with their nutritional status in Sidama zone, Southern Ethiopia” What does nutritional status mean? What are the indicators for it? There should be description in Methods.

Response #9: Nutritional status was measured using the z score. The indicators that we used to categorized infants as malnourished and normal were based the WHO categorization as stated in the statistical analysis of the method section. We presented in the prevalence of stunting, wasting and underweight in the result section.
Comment #10: Discussion: The discussion would better clearly state the disadvantages/bias of the index, direct the refinement, and introduce how to use it properly.

Response #10: As others composite indices do this index also mask individual changes.

Comment #11: What are the limitations of the study?

Response #11: The limitation of this study was described in the last sentences of the discussion.