Author's response to reviews

**Title:** Perception of caregivers about health and nutritional problems and feeding practices of infants: a qualitative study on exclusive breast-feeding in Kwale, Kenya

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Thank you for sending the valuable comments of the three reviewers for our manuscript.

For this revised manuscript (third version), we have responded only to two reviewers, Dr. Laura C. Altobelli and Dr. Susana Matias, since Dr. Xiaodong Cai reported that the manuscript was ready for publication in its current shape after the second revision.

The response to Dr. Altobelli basically amounts to an addition to the Limitations section. Dr. Altobelli questioned the study design, which did not focus on preventing insufficient milk production by properly teaching mothers about breast-feeding, i.e., correct breast-feeding techniques (frequency, position of baby's mouth over the breast, positions adopted by the mother and baby during breast-feeding), to prevent such basic problems as nipple pain and decreased suckling. We fully agree that her point is very important since it is part of a circular problem she described in her report (dated 28 February 2013). The present study was not designed, however, to investigate that aspect. Instead, it focused on perceptions and practices of mothers, and so we are unable to give a full response to Dr. Altobelli's point. Nevertheless, we firmly believe that the study findings are useful and will be important to those with closely related research interests, and we sincerely hope that you will consider the manuscript for publication.

**Reviewer: Laura C. Altobelli**

**Reviewer's report:**

In this second version of the paper, much improved in style and form, there is still insufficient discussion of more recent scientific literature on exclusive breastfeeding in relation to the basic design of this research as well as to the findings presented. In this new version, some literature is now cited but is from the early 1980's and 1990's and relies heavily on anthropological literature which does not take into consideration the new science of breastfeeding as a biological process based on demand and supply indeed.
with a heavy overlay of cultural beliefs and perceptions that impact on the demand. A reliance on the perceptions and values of mothers in a framework of purely cultural determinants can lead to a study that can potentially be off-mark in the basic design of the research, the research question and the types of qualitative data that is collected. For example, none of the study subjects had children less than 3 months of age. Most problems with exclusive breastfeeding initiate in the first days, weeks and months when the mother begins to introduce other liquids due purely to cultural habit, and that leads to decreased milk production and the start of breastfeeding failure. We don’t know when or even why the mothers in this study started introducing non-breast milk liquids because the questions were not asked. The scientific community now knows that the "insufficient milk " is a biological reaction to decreased suckling at the breast, and that increased suckling can produce more breastmilk. It is mother’s perception that the baby is not getting enough to eat that leads her to attribute the problem to a host of other causes. This is a circular problem that could begin with introduction of liquids leading to less suckling leading to decreased milk production leading to introduction of remedies leading to even less suckling at the breast and even less milk production. Or it could begin with infant illness leading to introduction of remedies (liquids and other foods) leading to less suckling at the breast and therefore decreased milk production and so on. The authors do not discuss the known need to focus on preventing insufficient milk production by proper teaching of mothers on the art of breastfeeding, i.e. correct breastfeeding technique (frequency, position of baby’s mouth over the breast, position of mother and position of baby in mother’s arms while breastfeeding) for prevention of basic problems with nipple pain and decreased suckling, and a plethora of known factors that work against breast milk production, only some of which are considered in the questions asked by the researchers in this study. The study conclusions in the abstract state that the solution for exclusive breastfeeding is to counsel mothers “relative to their concerns about the health and nutritional problems of children”, without mentioning the need to focus on primary prevention of breastfeeding failure. This study is a contribution to anthropological literature on some aspects of what mothers believe in relation to young child feeding and illness, as suggested by the first half of the title of this article. Unfortunately the interview questions were not sufficiently grounded in current scientific knowledge on exclusive breastfeeding to be able to call this “a qualitative study of exclusive breastfeeding” that could provide suggestions for the design of effective health interventions to improve its practice that would make it eligible for publishing in a medical journal.

Thank you very much for your valuable comments. I agree that preventing
insufficient milk production by properly teaching mothers about breast-feeding, including correct breast-feeding techniques to prevent the problem of nipple pain and decreased suckling, is a very important issue related to suboptimal practice of exclusive breast-feeding. It is true that we did not investigate this aspect in the study but focused on the perceptions of mothers. We have revised and made additions as indicated below.

- In the Discussion, we have revised the wording and placed more emphasis on “lack of knowledge about the physiology of lactation, the benefits of breast milk, and the nutritional needs and behavior of their infants” as factors relating to the perceptions of caregivers about insufficient breast milk.

- Since aspects of breast-feeding techniques were not investigated, as pointed out by the reviewer, we have made an addition to the Limitations section as follows: “Third, this study did not investigate breast-feeding techniques, including the frequency and positions adopted by the mother and baby. It has been demonstrated that proper breast-feeding techniques can prevent, for example, nipple pain, which often leads to decreased suckling and reduced milk production [32, 34, 35]. If information relating to how the mothers breast-fed their children had been gathered, that would have added a very interesting dimension to the study.”

- Responding to you point that none of the study subjects had children less than 3 months of age, please refer, for example, to Table 6 for direct observation. There were 7 out of 28 mothers who had children three or two months old.

**Reviewer: Susana Matias**

The revised manuscript includes a more complete description of the methodology used to collect data and of the sample of participants involved in the study. However, the Results, Discussion and Conclusions sections need some further revisions. The following suggestions could help to improve the manuscript.

**Major compulsory revisions:**

1) Current description of the study sample in included under a single paragraph under “Characteristics of the study participants” and the same information is presented on Table 1. It would be important to describe the education levels of the participants, particularly among the mothers as maternal education is related to infant feeding practices.

- We have described the educational level and number of living children of the mothers based on the original data.
2) Few vignettes were added to illustrate results about perceptions of insufficient milk and the need of additional foods, but not to the sections about perceptions of health-related issues. Adding vignettes on those topics would help the reader to understand the data interpretation process.

   - Under the section of “Remedies for perceived common illnesses of newborns,” we have added three quotes. Please see page pp. 16-17.

3) The Discussion and Conclusions sections need to be based on the data presented (including vignettes and tables). For example, from the vignettes presented one can conclude that there is definitely lack of knowledge regarding lactation physiology, benefits of breast milk, nutritional needs and behavior of infants. Also, from the data (particularly Table 5 and 6) it seems that supplementation may occur more frequently to provide additional food to the infant (due to lack of knowledge about the nutrient value of breast milk?) and not necessarily as a response to perceived ill problems as it seems to be emphasized in the manuscript.

   - In accordance with your suggestion, we have revised the Discussion and Conclusion sections to better reflect the presented data, and we have put less emphasis on the response to the perceived ill health of the babies.
   - In the Discussion, we have added the following sentences: “The ethnomedical explanatory model underlines the mothers’ perception of insufficient breast milk and lack of knowledge about the physiology of lactation, the benefits of breast milk, and the nutritional needs and behavior of their infants; in addition, this model accounts for their response to the perceived ill health of their babies.”
   - In the Conclusion, we have added the following sentences: “Although it appears to be the case that a lack of awareness of its advantages is one of the major reasons for failure to adopt exclusive breast-feeding, additional factors may also prevent caregivers from implementing this practice.”

4) Similarly, Figure 1 needs to be revised to better reflect the data presented

   - We have revised Figure 1 according to the data presented.