Author’s response to reviews

Title: Contraceptive use among lactating women in Ganta-Afeshum District, Eastern Tigray, Northern Ethiopia, 2015: A cross sectional study

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Point by point response to reviewers

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Dear reviewers,

Thank you for your constructive comments and suggestions. We found your comments very helpful for the improvement of our manuscript and learn about some of the limitations of our study. We have addressed the comments raised and incorporated in the document. Moreover, kindly find below the responses given to each of the comments raised.

Reviewer 1

Comment #1: This section starts with bold facts, such as about spacing and its effect on health. Such statements would need to be supported by a systematic review rather than one publication from Ethiopia. I would expect the introduction to give more essential background information. A background section would need to develop what is known about determinants of uptake of contraception and what not. The research question will need to be developed. This is for me not sufficiently done.

Response: dear reviewer, your comments are well taken and amended accordingly though we have tried to state in a shorter form to make the manuscript precise enough. Otherwise, the
factors to contraceptive use could be multifactorial. We have tried to state the factors like knowledge and educational level of the women, intensity of antenatal care, partner involvement, and decision making power of the women are documented as a factor to contraceptive utilization. The research questions this study tried to assess was what is the magnitude of the contraceptive uptake and its factors among this specific segment of women.

Comment #2: Be aware that for an international journal not only paper from Ethiopia, but what is known from similar settings are expected. I also miss the DHS in the literature review which should provide sub-regional estimation of contraceptive prevalence. A research question is missing.

Response: Dear reviewer, we have tried to cite studies conducted outside the study country. Regarding the demographic health survey report, reference number 9 is the DHS of Ethiopia which have documented the increase in the uptake of contraceptives from 8% to 36% over the last 16 years. Similarly, reference number 8 described the state of change of contraceptive use across sub-Saharan countries. The research question is what is the magnitude of contraceptive use among the lactating women and factors associated with postpartum contraceptive use. This is stated at the last sentences of the introduction section.

Comment #3: In view that there is no research question I'm not sure about the sample size. It is unclear how women were approached and selected in the respective Kebeles. This is important to understand the sample and a potential selection bias. It is very surprising that in this sample so many women deliver in a facility, thus I have concerns about a biased sample.

Response: Dear reviewer, I am not clear why you become uncertain with the sample size. Anyways, the sample size is computed according the assumptions stated in the methods section under “Sample size and sampling procedure” as below:

“Sample size was computed using single population proportion formula considering 51.3% proportion of modern contraceptive use [1], 95% confidence level, 5% margin of error and 1.5 design effects. Considering 5% of non-response rate, the final sample size becomes 605”

Regarding the approach we used to reach the study participants, we used cluster sampling method. After we selected the Kebeles (smallest administrative unit in the district), the health extension workers were responsible for identifying households with children between the ages of
6-12 months. We abstracted lists of women with eligible children from the log book of health extension workers. Mothers who were resident in the selected Kebeles for more than six months were eligible.

Dear reviewer, I am not clear why you become surprised with the rate of institutional delivery. This is not biased result which is in fact supported by different published and unpublished reports. The reasons could be the presence of improved maternal and health service utilization in the region particularly in the study district. This is documented in the regional health bureau documented the presence of improved maternal and child health service utilizations where ANC first visit, skilled delivery, post-natal care and child fully immunization rate was 100%, 69.2%, 81% and 90%, respectively [3]. Any pregnant mother is supposed to give birth at health center or hospital. For those mothers from difficult topographies, there is maternal waiting room in the health centers where term mothers come before labor initiated and made to stay and give birth in the health centers.

Similarly, a survey conducted in Afar, one of the regions of Ethiopia, found 96.1% of mothers had attended antenatal care visit, 90.7% gave birth at health institution and 58.4 % counseled on infant feeding practices [2].

The above findings could justify the results. However, as we have stated in the limitation part, we cannot say the study is free of any bias.

Comment #4: I'm missing a conceptual framework, this is important to prevent over-adjustment. Factors which are rather on the pathway of effects should not be included in the multivariate analysis.

Response: dear reviewer, you are right, the factors which are on the causal pathway cannot be considered as confounder. However, I am not clear to which variable are you referring to. To my understanding, the variables included in the multi-variable model are not on the pathway of the effects. For the seek of the size of the manuscript we did not included the conceptual framework of the study.
Comment #5: This section needs major revision as the results are not sufficiently reviewed against what is known from similar settings. The discussion is too much repetition of the results section.

Response: comment is well taken and revised.

Comment #6: A section on strength and limitations of the study / study design is missing. This should also discuss that the availability of a radio in households can also be a marker for being "modern", thus the effect could be different from a direct effect of probably receiving more information.

Response: dear reviewer, we have stated the limitation of the study design which is cross-sectional study where it is challenged by chicken egg dilemma where we cannot establish cause effect. This is stated at the first sentence of the limitation paragraph in the discussion section.

Comment #8: I'm not sure whether the paper adds new knowledge as it is well known that families from a higher wealth background have a higher uptake of contraception

Response: Dear reviewer, in the scientific community, showing the existing situation, and the changes made over period are helpful to understand the progress of the issue studied. Our study is not exploratory study where new knowledge can be created. However, this study documented the presence of improvement in the uptake of contraceptive among lactating women though there are many women who were not using contraceptives which make them at risk of getting pregnancy.

Comment #9: There is no discussion why contraceptive use is so high?

Response: dear reviewer, the contraceptive use is not so high. 68.1% contraceptive use in these currently married women who were out of exclusive breastfeeding is not so high. They are at risk of getting unplanned pregnancy. As it is stated in the first paragraph of the discussion, it is comparable with study conducted in Arsi, and even lower than the finding in Malawi where 75% of the lactating women were utilizing contraceptives.
Comment #10: It is difficult to base recommendations of how FP promotion should be done on a cross-sectional study which cannot produce any causality, and in view of this limitation I would recommend to have less bold recommendation.

Response: you are quite right we cannot establish causality using cross sectional study design for that matter we have acknowledged the limitation of the study. Besides, the recommendation is supported by the results.

Reviewer 2

Comment #1: Title is misleading: At first glance, it appears authors were looking at mode of delivery and contraceptive utilization as outcome and exposure respectively, however, detailed review reveals this is not the case. Also the term "modern contraceptive" has not been defined. I will suggest taking out the words "Mode of delivery is associated with modern" and just leave title as: "Contraceptive use among lactating women in Ganta-Afeshum District, Eastern Tigray, Northern Ethiopia, 2015: A cross sectional study" Unless authors define what they mean by "modern contraceptive" then they could add the word modern to the title suggested above. Otherwise its inclusion in the running title makes the title sound confusing. Another title to consider is: "Factors associated with contraceptive use in Ganta-Afeshum District, Eastern Tigray, Northern Ethiopia, 2015: A cross sectional study"

Response: dear reviewer, it was stated to emphasis the relationship between mode of delivery and contraceptive use. Anyways your comment is well taken and stated as “Contraceptive use among lactating women in Ganta-Afeshum District, Eastern Tigray, Northern Ethiopia, 2015: A cross sectional study”

Comment #2: The introduction needs some edits. For instance, the case made for the purpose of the study is not convincing enough. What is the clinical or public health relevance of conducting this study at this time?

Response: comment is accepted and stated as “few studies have documented the magnitude of contraceptive utilization and factors associated with it among women who were within six to twelve months of their index delivery. Therefore, this study was conducted to document the magnitude of postpartum contraceptive utilization and factors associated with it. This specific study is targeted on the lactating women with index child aged 6 months to one year which will help programmers and policy makers design specific intervention targeted to these specific segments of women. Besides, it could serve as a baseline data for further future studies”
Comment #3: Methods section needs a bit of detail. No information regarding how the variables were coded, for instance, regarding age of participants and age of their "children", were these coded as continuous or categorical according to age range? Please specify how all the included variables were coded, as this will be helpful with interpretation of results.

Response: comment is accepted and stated in the analysis section as “Participants’ age, their index child’s age, family size, and total number of births were treated as continuous variable.”

Comment #4: Results: Authors seem to have only called out results that showed statistical significance. It is important to report results that were also "interesting" whether they were significant or not and explain such findings under the section on discussion. For instance, ANC counselling on family planning, partners' marital status and participants' partners' educational level should be reported. Isn't it interesting that those with elementary education and those in grade 5-8 were less likely to use contraceptives compared to illiterates? Although this was statistically significant, authors could comment on what might be happening here.

Response: your comment is valid and included in the discussion.

Comment #5: Discussion: please add a little detail to the discussion. On page 7 line 19 to 21, unless separate models were run to examine the factors associated with mode of delivery, reporting on the relationship between, having a radio or not was associated with mode of delivery sounds confusing.

Response: dear reviewer, it is editorial error. It is not to mean having radio is related with mode of delivery. It is to mean both having radio and mode of delivery was found statistically associated with postpartum contraceptive use. It is corrected accordingly.

Comment #6: There are several limitations to this study, and the two limitations stated are not enough. No information on prior use of contraceptives in previous pregnancies and how this affect current use? Although study personnel were given a two-day training, how accurate were the information collected? Etc.

Response: comment is accepted and stated as below:

“The cross-sectional nature of the data poses causality challenges. It is difficult to ascertain the association between postpartum contraceptive utilization and the predictor variables since they were measured at one point in time. The study did not address all health system related factors.
and history of prior use of contraceptives in previous pregnancies that could affect postpartum family planning utilization. Though training on the objective and procedure of the data collection was given to the data collectors, the issue of interviewer and social desirability bias is inevitable.”

Comment #7: Grammar and language: this needs a thorough revision and editing across the entire manuscript. For instance, under the background section line 51 and 52 reads: "Many studies have been conducted on the whole women", lines 57 to 60 page 6 under discussion reads: "The risk of getting pregnancy increases when a woman shifted from the period of exclusive breastfeeding to the period of nearly fully breastfeeding" line 46 and 47 page 7 under the section on discussion reads: "The rate of caesarean delivery in the study was 2.5%. This is not far from the national population based caesarean delivery rate, 0.6%..." These are a few excerpts of sentences that needs rephrasing, the issues cut across the whole manuscript.

Response: comment is accepted and the whole document is reviewed by a native speaker of English, Mr. Dean Withroder, from America.

