Reviewer's report

Title: Institutional Delivery Service Utilization and Associated Factors among Mothers who gave birth in the last 12 Months in Sekela Woreda, West Gojjam Zone, Amhara Regional State, Ethiopia Alemayehu Shimeka, Fekadu Mazengia and Solomon Meseret

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Reviewer: Rose Mpembeni

Reviewer's report:

Major Compulsory Revisions: None

Minor Essential Revisions

1. Abstract:
   Well written but few areas need to be reinforced. Eg:
   Introduction: It should be clear that increasing attendance by skilled attendants throughout pregnancy is the key intervention to reducing maternal mortality and not Institutional delivery services alone. This should be spelt out clearly because in areas with constraints of Human resource for health, deliveries can be conducted even by unskilled attendants!!
   Methods: What methods of analysis were used to analyse qualitative data?
   Results: Some statements need to be qualified: Eg variables like Residence of mothers- does this have to do with distance to facilities? Knowledge of mothers on what?

2. Background:
   Well written but should be reinforced with information about maternal health services in Ethiopia. How is the Health System in Ethiopia like? According to the policy, who is allowed to conduct deliveries? At what level of health facilities can women get delivery care services? etc

3. Study Design and period:
   The information on the study area is too brief. One would expect to learn about the health system in Sekela Woreda. For example authors are mentioning the numbers of Health centres and Health posts, do all these provide delivery care? What about availability of Health care providers? Are there only 2 midwives for the whole woreda? If so what other cadres of health care providers provide delivery care? What about other health indicators from the study area? eg accessibility to the health facilities, prevalence of FP etc.

4. Sample size Calculation:
   Currently there are computer programs which are used to calculate sample sizes, so a manual sample size formular need not to be shown in the publication. Just a
mention of how the sample size was calculated or the program used and the inputs you used to calculate the sample size and any assumptions you made.

Design effect should be accounted for where cluster sampling technique is employed. In this study, Authors mention the sampling technique to be multistage sampling. Was this multistage cluster sampling or just multistage sampling technique? Also on pg 5 the authors mention dividing the study area into 2 Strata? Was this stratified sampling? This needs to be clarified

Why a design effect of 2? Need explanation and reference!

5. Data processing and Analysis:
What was the need of doing double data entry for just 10% of the questionnaires? Explain how this was useful in checking for data quality.
In data analysis you used both binary and multiple Logistic regression. This should be mentioned in this section
What variables did you consider to be confounding which you therefore controlled for?

6. Results:
In the third paragraph, Authors mentioned the distribution of time taken to the health facility and family size and referred to Table 1 but are not shown in table 1:
Institutional Delivery Care utilization: The quotations from the qualitative study shows the reasons for home deliveries and therefore not in the right place. This information should be presented to support information given in Fig. 3.

Fig 1: Will transmit a better message if it will show the delivery attendant rather than place of delivery since as mentioned above assistance by skilled attendant is the recommended intervention.
Table 2: The variable- Ever visit health facilities during pregnancy: This should be specified that it is due to illness or any other reason not related to the pregnancy. This is because as it appears now it should include ANC visits and hence should have a higher percentage than just ANC visits.
Fig 3 showing reasons for home deliveries- Use of number of mothers who reported a particular reason is not proper. Percentages make more sense than numbers.
Factors Associated with Institutional Delivery service Utilization: Knowledge and attitude of mothers are shown to be significant predictors of Institutiona Delivery Service Utilization. How were they assessed and analysed? Be specific about knowledge- it was knowledge on what?

7. Discussion: Too much repetition of results in the discussion

Discretionary Revisions
1. The manuscript title is too long and this is because of many words used for the study area. The Authors should look for few words which can tell where the study was conducted.
2. Most of the data used in the manuscript is quantitative data - the input from qualitative data is minimum. Authors may consider using only quantitative data in this manuscript and develop another manuscript using the qualitative information.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests