**RESPONSE TO REVIEWERS**

Luanda, 12 December 2018

Ms: Sociodemographic determinants of caesarean delivery in the largest public maternity of Angola

Dear Editor,

We thank the opportunity to address the comments of reviewers. We have addressed all the comments and suggestions made by the Editor and the reviewers, and appropriated changes were performed. Find below our response to each comment. We feel that the manuscript has improved. We would like to acknowledge that the title was changed according to the reviewers’ comments and suggestions. All the significant changes were highlighted in blue color.

Sincerely,

On behalf of all the authors,

Tazi Nimi

**#Editor#**

**#Comment:** “- com o objectivo de optimizar a legibilidade do seu artigo e assim incrementar potencialmente as citações do mesmo, recomendamos que os conteúdos redigidos em inglês sejam revistos por um "native speaker", tradutor qualificado ou empresa especializada em serviços de "language polishing";

- é obrigatório o título e o resumo em português;

- o abstract, o resumo e o corpo do manuscrito deverão estar estruturados de acordo com as secções permitidas: Introduction (esta secção inclui os objectivos do trabalho), Material and Methods, Results, Discussion, Conclusion;

- algumas das referências na listagem final estão incompletas (ex: 5, 17) e outras necessitam de revisão (ex: 13, 14, 15, 16...).”

**#RESPONSE:** Agradecemos a oportunidade que nos foi concedida para reformular o artigo, acreditamos que a nova versão melhorou significativamente. O manuscrito foi revisto por um “native speaker”. Foi incluído o resumo e o titulo em Português, bem como o corpo de texto estruturado de acordo com as normas da revista. As referências foram todas revistas.

**#Revisor B #**

**#Comment 1**

RELEVANCE: This is a relevant research for Angolan healthcare workers and provides a wide perspective on caesarean demographic and social determinants. It could be interesting to publish this article in Portuguese, to ease sharing among that community. If well spread among political and healthcare influencers in Angola, it could contribute to positive changes in caesarean policies.ORIGINALITY: There are some studies in African countries, but no relevant and detailed data specifically addressing Angola or another Portuguese speaking country was found.
MISCONDUCT: Apparently there is no misconduct in this research.

**RESPONSE:** Thank you for your comments and suggestion. We decided to keep the manuscript in English due the capacity of widespread not only in Angola but in other African contexts. However, a report in Portuguese language presenting and discussing the main results of this study was disseminate among several health institutions and also policy makers.

**# Comment 2**
STRUCTURE OF THE MANUSCRIPT
TITLE: Maybe it could be considered to be shortened to: Social and Demographic determinants of Caesarean Delivery in the largest public maternity of Luanda, Angola.

**RESPONSE:** We thank the reviewer for the suggestion. We have shortened the manuscript title to “Sociodemographic determinants of caesarean delivery in the largest public maternity of Angola”

# **Comment 3**

ABSTRACT: Missing Portuguese abstract.

**RESPONSE:** We apologize for this. We have now included the Portuguese abstract in the manuscript.

**# Comment 4**

INTRODUCTION: Objectives are clearly described. A more depth description about Angolan obstetric services could be done. Well written and summarized.

**RESPONSE:** Thanks a lot for your comments. We included additional information about it in the manuscript.

*Page 5, Paragraph 1 and 2:*

*Since the independence of Angola, in 1992, it was created the National Health System based on equity, universality and gratuity (8). Moreover, the National Health System care in Angola includes 2,356 unities, of which 1,981 primary care services, 210 hospitals and 43 centers of maternal and child health (39). According to the “Inquérito de Indicadores Múltiplos” (IIMS) of Angola, 82% of women with one child born alive in the five years prior to the survey received pre-natal consultation. Nearly half of births (46%) occur in a health facility (44% in the public sector and 2% in the private sector). Nevertheless, more than half of births (53%) occurred outside the hospital with no assistance of health professionals.*

*However, there is a lack of studies focused on maternal health in this African context. Thus, the aim of this study was to describe demographic, socioeconomic and pregnancy-related characteristics associated with a caesarean delivery in the largest maternity of Luanda, Angola.*

**# Comment 5**

METHODS: Past tense should be used. In an Angolan setting the study design and methods were a good option to gather social and demographic information. It could clarify what kind of bias the used methodology addresses. Exclusion from severe conditions and twin pregnancies could be analysed separately, since social and demographic characteristics of such population are also relevant.

**RESPONSE:** We thank the reviewer for this suggestion. We rewrote the sentences using the past tense. We agree with the reviewer in regards to the bias due to exclusions. However, as these exclusions were made at the recruitment, there is no information about these women. Thus, we added to the discussion a sentence about it.

*Page 13, paragraph 1:*

*Women with severe conditions at delivery and multiple childbirth were excluded during the recruitment, which may lead to a selection bias, once we could have excluded women with the different socioeconomic profile.*

**# Comment 6**

RESULTS: Results seem to be accurate and clear.

**RESPONSE:** We thank the reviewer for this comment.

**# Comentário 7**

DISCUSSION: Past tense is more adequate, but it can include present tense. Anyway, it need to be coherent time during all section, please review this – past tense should be used for previous studies (corrections to do).

**RESPONSE:** We thank the reviewer for the suggestion. The manuscript was revised accordingly.

**# Comment 8** (minor corrections)

Comparison with European studies might be a relevant bias. Was the survey previously validated? Missing information about recall bias. Also a social desirability and interviewer bias could be referred. Missing information about further studies.

**RESPONSE:** We agree with the reviewer and any comparison with European contexts was removed from the discussion. The limitations section was also improved.

Information on further studies was added to the final conclusion:

*Page 13, Conclusion:*

*“Further studies exploring the delivery experience, among women who gave birth at home, with no help from a health professional, would contribute to a more comprehensive understanding of the maternal health care in the Angola context.”*

**# Comment 9**

CONCLUSIONS: Recommendations instead of real conclusions. Recommendations can be kept but basic conclusions from the study (statistical significant results) should be presented before.

**RESPONSE:** We absolutely agree with the reviewer. We added a sentence about the main finding of the study and we also kept some recommendations.

*Page 13*

*Sociodemographic differences were observed according to the type of delivery. Cesarean was more prevalent among women with lower income and residents in periurban areas.*

**# Comment 10**

REFERENCES: References are reported to 2014 and previous years. A more recent literature review could be performed.
**RESPONSE:** We have updated some references as you suggested.

**# Comment 11**

TABLES/FIGURES: In both tables if values are near variables names, some lines between variables categories could be removed to ease reading.
“No information” instead of “no info”
In Table 2 it should include 1,0 (Reference) instead of only Reference.
Where tables should be placed in the article?

**RESPONSE:** We thank the reviewer for the suggestions. All the recommendations were considered.

**# # Revisor C ##**

**# Comment 1**

The article “Social and Demographic determinants of Caesarean Delivery in the largest public maternity of Luanda, Angola.” analyzed correlates of Caesarian delivery inside a maternity of Luanda, Angola. The article is really interesting and well structured. The grammar is satisfactory, the structure is very good and the references are strong. As my expertize is statistics, my main points are concerning the structure of statistical analysis. In my opinion, the authors does not have enough power to split the sample by primiparous and multiparous. In this sense, I suggest conducting three models for association analysis to both, have enough power and estimate the effect of be primiparous or multiparous on independent variables:
model 1: crude analysis
model 2: Adjusted (include all confounders significant on table 1)
model 3: interaction primiparous / multiparous x independent variables with confounders. (to estimate the impact of primiparous / multiparous on independent variables).

**RESPONSE:** We thank the reviewer for this suggestion.

**# Comment 2**
Introduction
1) Are differences in delivery rates among developed and underdeveloped countries? (this is presented in the discussion) This information should also be inserted in the introduction.
**RESPONSE:** We thank for the suggestion. We included a sentence in the introduction about this.

*See Introduction, page 4:*

*Previous studies showed that in developing countries, the caesarian section has been increased among women from the richest classes (10), although in the developed countries this increase was observed among poor and less educated women (9).*

**# Comment 3**
Results
2) Please insert descriptive statistics chronological age in years…)
**RESPONSE:** We thank for this suggestion.

**# Comment 4**
3) Table 1: The authors should insert relative frequencies and 95% confidence intervals. It will be useful to detect exact differences.
**RESPONSE:** Thank for the suggestion. We decided to keep the sample distribution by each covariate as we wanted to compare the characteristics distribution.

**# Comment 5**
4) Why did you splatted by primiparous or multiparous? The statistical power seems to be not good given the high variance of confidence intervals. Please consider:
Three models, with no split:
model 1: crude analysis
model 2: Adjusted (include all confounders significant on table 1)
model 3: interaction primiparous / multiparous x independent variables with confounders. (to estimate the impact of primiparous / multiparous on independent variables)
Creating these models, the authors will have good statistical power as well as estimate the impact of be primiparous/multiparous on the association between independent and caesarian delivery.
**RESPONSE**: We run the models suggested by the reviewer and we decided to present results as supplementary material (see the Supplementary Table 1).

**# Comment 6**
1) Title: Is this the largest public maternity of Angola? If so, please exclude “Luanda” from the title
 **RESPONSE:** Thank for the comment. The new title is: “Sociodemographic determinants of caesarean delivery in the largest public maternity of Angola”

**# Comment 7**
2) Abstract, line 5: Please exclude “The” from “the data”.
**RESPONSE:** Thank for the suggestion.

**# Comment 8**

Introduction:
3) The authors should insert national rates from Angola about deliveries (e.g. proportion of caesarians, proportion of home delivery, hospital delivery…).
**RESPONSE:** We appreciated this comment. We added more information about the context to the Introduction.

*Page 5, Paragraph 1:*

*Since the independence of Angola, in 1992, it was created the National Health System based on equity, universality and gratuity (8). Moreover, the National Health System care in Angola includes 2,356 unities, of which 1,981 primary care services, 210 hospitals and 43 centers of maternal and child health (39). According to the “Inquérito de Indicadores Múltiplos” (IIMS) of Angola, 82% of women with one child born alive in the five years prior to the survey received pre-natal consultation. Nearly half of births (46%) occur in a health facility (44% in the public sector and 2% in the private sector). Nevertheless, more than half of births (53%) occurred outside the hospital with no assistance of health professionals.*

**# Comment 9**
Results: 4) Family income: What is other?
**RESPONSE:** We change it in the Tables and we clarified it on the Methods Section: “Do not know/ prefers not to disclose”.

**# Comment 10**
5) Table 1: Please insert the pattern of correlate (e.g. sociodemographics…) in the first line and exclude from the left side. The table will become cleaner.
**RESPONSE:** We agree and we changed it. Thank for the suggestion.

**# Comment 11**
6) The authors should adjust the title of Table 2 aiming to let clearer, my suggestion is: “Association between option by caesarian delivery and correlates”
**RESPONSE:** Thank for the suggestion, we changed the title for: “Association between sociodemographic characteristics and type of delivery”.

 **# Comment 12**

Discussion
7) Please improve the main findings (1 paragraph of discussion)
**RESPONSE:** Thank you for your suggestion. Improves were made

*Page 10, Paragraph 1:*

*The caesarean delivery was highly prevalent in this sample of Angolan women. Moreover, higher rates of caesarean were observed in women with lower family income and living in a peri urban area, independent of parity status and even after additional adjustment for health condition as hypertension. These results are consistent with previous studies in African contexts, that report associations between low socioeconomic position and a high risk of caesarean delivery (*[*https://journals.sagepub.com/doi/pdf/10.4137/CMWH.S27161*](https://journals.sagepub.com/doi/pdf/10.4137/CMWH.S27161)*).*

**# Comment 13**
 \*\*Suggestion\*\* The authors should try to conduct a mediation analysis to answer the main question (maybe in future analysis) with: iv: income, dv: type of delivery, mv: satisfaction with health care during prenatal period. This can be done with categorical variables

**RESPONSE:** We thank the reviewer for this suggestion. We are exploring the idea of mediation for a future paper.