Reviewer’s report

Title: Factors Influencing Unmet Need for Family Planning among Ghanaian Married/Union Women: A Multinomial Mixed Effects Logistic Regression Modelling Approach

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Reviewer: Micaela Comendeiro Maaloe

Reviewer’s report:

In general terms, nothing further to add to what already was said in the first round of revision and that unfortunately has not been taken care of.

As far as I understand, the purpose of this study is to examine factors associated with the need of family planning services which at the end does not really tell us nothing we did not previously know from other countries evidence. Even though it is an interesting topic, there is plenty of international literature addressing it. Therefore, I miss more information in the background section taking about the specificity either the population, the health system and/or the provision of health services in Ghana which justify addressing this study.

On the other hand, as I understand author's response to the other reviewer, if the need of addressing this study relies in the new methodological approach modelling both observed and unobserved variables, I still find the sub-section of Statistical Analysis unnecessarily long containing obvious explanations of some common statistics like de p-values or the Akaike info criteria. [Nevertheless, I somehow understand the authors confusion in this regard when another reviewer seems to have suggested the opposite as they answered: "most of the information provided in that page was a request of one of the reviewers in the first round of review"] while strongly missing some explanation about what the cluster effect does or means, not only statistically speaking in terms of specification of the standard errors, but also conceptually speaking in this specific study (i.e., addressed to decision makers).

Besides, since cluster effect did stay significant and improved model specification throughout the whole process, sentences like "In the absence of any cluster effect, our model represents an ordinary multinomial logistic regression" are not necessary and it can lead to confusion.

Finally, in the Conclusion section, even though the authors well indicate that they are not able to emphatically state which variable predicts better. They at least could summarize, according to the results, which variables or group of variables could have a greater impact addressing the unmet need for family planning concern.

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