Author’s response to reviews

Title: The influence of socioeconomic factors on choice of infant male circumcision provider in rural Ghana; a community level population based study

Authors:
Thomas Gyan (thomas.gyan@uwa.edu.au)
Kimberley McAuley (kimberley.mcauley@uwa.edu.au)
Natalie A. Strobel (natalie.strobel@uwa.edu.au)
Sam Newton (samkofinewton@yahoo.com)
Seth Owusu-Agyei (seth.owusu-agyei@kintampo-hrc.org)
Karen Edmond (karen.edmond@uwa.edu.au)

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Author’s response to reviews:
Dear Natalie, thank you again for the review of our revised paper. We address the Editor’s comments below, we have made these changes in the revised manuscript and have attached a clean and track changed version.

We look forward to your response.

Kind regards
Thomas Gyan

Editor Comments:
1- Thank you again for revising your manuscript. However, your description of the multivariable logistic regression models are still unclear. You say the models included “infant and maternal characteristics” that were “adjusted for income, cost, religion, maternal age…” Why are these particular variables mentioned specifically as opposed to all the other “infant and maternal characteristics” in your table that were also included and thus adjusted for in these models? Isn't maternal age, religion etc.. also a maternal characteristic? It is unclear why you distinguish
between the first set of characteristics and the ones that you specify. If they are all in your
models, as they appear to be, then they are all adjusted for.

Apologies for still not being clear with the multivariable modelling.

The following variables were not included as adjustment factors for model 1 or 2: maternal
occupation, site of delivery, birth weight and age at circumcision. Potential confounders were
decided a priori. These particular variables are however assessed using the same method as
further described directly below.

When we run the models for income status, cost of circumcision, religion, maternal education
and maternal age, the respective variable wasn't adjusted for. For example, for maternal age
(with its age subgroups) the ORs under model 1 were adjusted for provider type, income status,
cost of circumcision, religion and maternal education. Thus, in this model maternal age is not
being included as an adjustment variable. Using age at circumcision as another example, we
adjusted for provider type, income status, cost of circumcision, religion, maternal education and
maternal age.

This method was used for each or the maternal and child characteristics hence the analysis was
run 10 times with each analysis including the adjustment variables income status, cost of
circumcision, religion, maternal education and maternal age.

For model 2, the method is same as model 1, however the additional variable, distance to health
facility, was included. Using maternal age once again as the example, to get the ORs under
model 2 the following variables were adjusted for: provider type, income status, cost of
circumcision, religion, maternal education and distance to facility.

2- It would be more appropriate to list out explicitly all the variables that were included in each
Model: Multivariable logistic regression models were constructed a priori to adjust for the effect
of important explanatory variables. Model one included income status, cost of the circumcision,
maternal occupation, maternal education, religion, maternal age, site of delivery, birth weight,
and age at circumcision. Model two included all of the variables in model one with an additional adjustment for distance to health facility.

As outlined above in the response to comment 1, model one does not include all variables listed in the table. We assessed each of the infant and maternal characteristics as determinants of choice of informal provider, adjusting for important explanatory variables including, income status, cost of circumcision, religion, maternal education and maternal age. For model 2 we once again assessed each of the infant and maternal characteristics as determinants of choice of informal provider, adjusting for important explanatory variables including, income status, cost of circumcision, religion, maternal education, maternal age and distance to health facility.

• We have therefore updated the text as follows in the statistical analysis section on page 6 lines 172 to 178:

Multivariable logistic regression models were constructed apriori to adjust for the effect of important explanatory variables (income status, cost of circumcision, religion, maternal education, maternal age and distance to health facility). Model one assessed each of the infant and maternal characteristics as determinants of choice of informal provider, adjusting for income status, cost of circumcision, religion, maternal education and maternal age. Model two is the same as model one with an additional adjustment for distance to health facility.

3. Please also include these lines as your footnote to Table 2, instead of using the previous wording.

• As per the explanations above, the footnote for table 2 has been left as is.