Author’s response to reviews

Title: Prevalence of child marriage and its impact on fertility outcomes in 34 Sub-Saharan African countries

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Editor Comments:
I have received favourable reports from two reviewers. The revisions requested from the initial review were responded to in detail and the reviewers are satisfied with these revisions. However, they have some minor remaining comments which I think if addressed will strengthen the final manuscript. I look forward to receiving these minor revisions.
Response: Thank you for your constructive comments. The paper was reviewed in line with the comments and suggestions.

Reviewer reports:
(Reviewer 2): I think the authors did a good job responding to the reviewers' requests. I only have one last minor comment.

I think the authors need a better description of what social norms are. The need to reinforce social ties and protect their daughters don't come across as being social norms. Maybe just change the sentence "Furthermore, social norms such as the need to reinforce social ties and protect their daughters from sexual adversity are among the leading causes, as some parents believe that they can improve their social status by marrying their daughters to a well-off family" into "Furthermore, the need to reinforce social ties and protect their daughters from sexual adversity are among the leading causes, as well as the fact that some parents believe that they can improve their social status by marrying their daughters to a well-off family"
Response: Thank you for this. This portion was reviewed and the statement was replaced with the one that gave a better description of what social norms are. "Furthermore, the needs to reinforce social ties and protect their daughters from sexual adversity are among the leading causes, as well as the fact that some parents believe that they can improve their social status by marrying their daughters to a well-off family"

A final copy-editing and renumbering of references would make the paper more pleasant to read.
Response: Thank you for these valuable suggestions. The references were considered and reviewed for its contributions and renumbering was done in line with the way they appeared in
Kathryn Mary Yount, PhD (Reviewer 3): Comments to the authors

This paper uses DHS data for more than 30 African countries to assess the relationship between child marriage < 18 and several fertility and contraceptive-related outcomes. The paper makes an important conceptual contribution to the field and is appropriately placed in BMC IHHR. The authors have been attentive to prior reviews. I have a few recommendation and questions that the editor may consider discretionary.

1. Some editing of the text still is needed for typos and English grammar. 
Response: Thank you. The manuscript was considered, reviewed and edited to correct typos, English grammar and other language issues.

2. Did the authors consider trichotomizing the exposure variable to <15, 15-17, and 18 plus? If not, then either a strong justification is needed to a sensitivity analysis assess the robustness of the findings would be useful. 
Response: Thank you for this important suggestion. We focused on child marriage as defined as any formal marriage or informal union where one or both of the parties are under 18 years of age, based on international human rights guidelines. We agreed we could have trichotomized the exposure variable to <15, 15-17 and 18 to test for differences by early and very early marital ages. We have added this as a limitation. In addition, within policy arena, the focus is usually on zero tolerance on child marriage and not differentiating nor attaching ranking or importance to any form early child marriage, such as labeling early versus very early. We focus on the early child marriage as whole.

3. A stronger justification for use of country weights in the pooled analysis is needed. Did the authors consider a sensitivity analysis without weights?
Response: Weighting is an essential aspect in household survey data analysis. Unlike population census, for all household surveys including DHS were samples were not allocated proportionately to the respective population across all strata, clusters or secondary sampling units; it is important and highly recommended that appropriate weights must be applied to each and every primary sampling unit to derive meaningful estimates.

For DHS surveys, data were not collected from the entire population of people or households in the area being studied. Rather, a small sample of the population were surveyed and statistical techniques are used to estimate values for the entire population in the study area based on the sample. Therefore, in order to make the findings generalizable, survey weighing is useful to estimate the population totals based on the sample. It is important to note that, in addition, we also carried out unweighted analysis, and the findings were comparable, no much visible differences were observed between weighted and unweighted analyses.

4. Some of the findings regarding the relationship between child marriage and fertility/contraceptive outcomes seem contradictory (e.g., higher modern contraceptive use and
lower unintended pregnancy but high number of births). A more nuanced discussion of these seemingly contradictory findings would strengthen their policy implications.

Response: This a valid argument. Our understanding is that higher contraceptive prevalence rate leads to lower rates of unintended pregnancy, which is in theory preventive of higher fertility. Nonetheless, it doesn’t account for fertility preference as some women may use modern contraceptive and still desire high parity. In light of these observations, we recommend that policy instruments be developed to correct ‘fertility behaviour’ as an integral part of the strategies to increase the average age of marriage. This was now mentioned on the manuscript.