Author’s response to reviews

Title: Child Marriage in Ghana: Evidence from a Multi-Method Study

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Version: 2 Date: 25 Apr 2019

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Editor
BMC Women’s Health

April 25, 2019

Dear Editor,

COVER LETTER – RESPONSE TO REVIEWERS COMMENTS

We would like to thank the reviewers and the editor for reviewing our manuscript titled “Child Marriage in Ghana: Evidence from a Multi-Method Study” (BMWH-D-18-00743R1). We appreciate the comments and suggestions made by the reviewers.

The requested revisions have been effected in the revised version of the manuscript and are highlighted in green (in some cases not exclusively the newly added text). Kindly see below a detailed description of the revisions.

Sincerely,

Kamil Fuseini
Corresponding Author
Reviewer 1
Shanta Pandey

Child Marriage in Ghana: Evidence from a Multi-Method Study MBC Women's Health Manuscript # BMWH-D-18-00743R1. This is an important and timely topic. Qualitative section has rich information. The manuscript is well written. I have some minor comments to the authors.

Comment 1: On page 7, it appears that the Government of Ghana introduced child marriage ban in 1998. After 16 years, the Ministry of Gender, Children and Social Protection established a Child Marriage Unit in 2014. What kind of resources are allocated to this Unit? Are there any examples of the national initiatives that this unit has been implementing to end child marriage? To what extent these initiatives responded to the suggestions offered by the women in the focus groups? Linking this to the discussion on page 27 would be helpful.

Response: We would like to thank the reviewer for these useful suggestions. We reviewed documents from the Ministry of Gender, Children and Social Protection on child marriage, however, we were unable to find out the kinds of resources allocated to the Child Marriage Unit.

With respect to national initiatives that the unit has implemented towards end child marriage, we have revised the paragraph to reflect the objective of the Child Marriage Unit and development of the National Strategic Framework on Ending Child Marriage. See page 7 of the revised manuscript.

We have also revised the discussion section as suggested by the reviewer to link some of the initiatives implemented by the unit to the findings in this study. See the first paragraph on page 26 of the revised manuscript.

Comment 2: On page 9, the authors restricted the sample to women between 20 to 24 years of age. It appears that the authors would have three groups of women. Those married before age 18, those married after age 18 and those not yet married. What proportion of the women were not married?

Response: We would like to thank the reviewer for raising this issue. The child marriage indicator can be defined as:

\[ \frac{\text{Number of women aged 20 to 24 who indicated that they were married or in union before the age of 18}}{\text{Total number of women aged 20 to 24}}. \]

The reason for restricting the analyses of child marriage to women 20 to 24 years old who first married or entered into union before age 18 was to ensure that no respondent was still at risk for marriage during adolescence (Erulkar, 2013). In other words, the percentage of girls aged 15 to 19 who are married or in union at any given time includes girls who are aged 18 and 19 and no longer children, according to the internationally accepted definition. Additionally, the indicator includes girls aged 15, 16 and 17 who are classified as single, but who could eventually marry or enter into a union before the age of 18. By taking a retrospective view, the indicator covering women aged 20 to 24 is not affected by these limitations and so more accurately approximates the real extent of child marriage (United Nations Population Fund, 2012).

Additionally, the reviewer is correct that we could have three categories (“Those married before age 18,
those married after age 18 and those not yet married.”). With these categorization, one can look at the characteristics of the three categories. However, these analyses are beyond the scope of the present study since the focus was on child marriage as explained above.

With respect to the proportion of the women who were not married in the sample, the proportion of women aged 20 – 24 who had never married in the sample was 57.93%.

Age at first marriage among women aged 20 – 24

Married before age 18 (frequency = 334 and percent = 20.68)
Married after age 18 (frequency = 345 and percent = 21.39)
Never Married (frequency = 934 and percent = 57.93)

Source of data: 2014 GDHS dataset

Comment 3: On page 10, it appears that about 21% of the women between 20 to 24 years of age were married before age 18. There were women married at age 10. What percentage of them were married before age 15? Also, it would be helpful if the rate of child marriage changed between the previous Demographic Health Survey cohort and this cohort. This would help monitor the progress made over time.

Response: Thank you very much for this comment. Among women aged 20 to 24, less than one percent (0.18%, 3 women – weighted data) got married at age 10. We have included this information in the revised manuscript. See page 11.

With regards to marriage before age 15, 4.88% of women aged 20 to 24 married before age 15. However, it is important to note that we acknowledged in the original manuscript that “It is worth noting that girls aged 12-15 compared to girls aged 16 to 17 who are sexually active, married or mothers raise different issues. However, this discussion is beyond the scope the present study.” See page 25 of the revised manuscript, last paragraph.

Age at first marriage among women aged 20 – 24

18 years and above (frequency = 1,534 and percentage = 95.12)
< 15 years (frequency = 79 and percentage = 4.88)

Source of data: 2014 GDHS dataset

In the 2008 Ghana Demographic and Health Survey data, 24.58% of women aged 20 to 24 married before age 18, which reduced to 20.68% in 2014. We have added this information to the revised manuscript on page 25.

Age at first marriage among women aged 20 – 24

18 years and above (frequency = 662 and percent = 75.42)
< 18 years (frequency = 216 and percent = 24.58)

Total (frequency = 878 and percent = 100.00)

Source of data: 2008 GDHS dataset
Comment 4: Finally, in the discussion section, you indicated that "the police and other law enforcement institutions should step up efforts to curb child marriage." Has Child Marriage Unit established in 2014 been implementing any policies to this effect? Some discussion of the current governmental efforts and additional efforts going forward would strengthen the manuscript.

Response: We would like to thank the reviewer for these suggestions. After a thorough search we could not find any new interventions implemented by the Child Marriage Unit that will make the police and other law enforcement institutions step up their efforts. However, we revised the manuscript to include some of the key activities that have been implemented by the unit. See the first paragraph on page 26.

Reviewer 2
Alexander Krämer

Summary:
The authors submitted a manuscript which is very relevant to women's health. The paper is written in proper English language. The methodology is generally sound and presents interesting results that fit the scope of the journal.

However, I have some recommendations and critical statements to make:

Comment 1: The sample size needed for the quantitative analysis was not calculated and critically reflected.
Response: The quantitative component of the present study used data from the 2014 Ghana Demographic Health Survey which is a nationally representative sample. The sampling procedure and calculation for the 2014 GDHS can be found in the report (Ghana Statistical Service, Ghana Health Service, & ICF International, 2015). With respect to limiting the sample to women who were aged 20 to 24, it was based on empirical evidence in the literature. A sample of 1,571 (weighted sample 1,613) women aged 20 to 24 is good enough for these analyses.

Restricting the sample to women 20 to 24 years old was to ensure that no respondent was still at risk for marriage during adolescence (Erulkar, 2013). In other words, the percentage of girls aged 15-19 who are married or in union at any given time includes girls who are aged 18 and 19 and no longer children, according to the internationally accepted definition. Additionally, the indicator includes girls aged 15, 16 and 17 who are classified as single, but who could eventually marry or enter into a union before the age of 18. By taking a retrospective view, the indicator covering women aged 20 to 24 is not affected by these limitations and so more accurately approximates the real extent of child marriage (United Nations Population Fund, 2012).

Comment 2: It is not clear why all 10 regions were involved in the quantitative component of the study whereas only 2 regions were involved in the qualitative studies. Clarification is needed in the methods section. Can it be stated that the 2 regions selected for the qualitative studies represent contrasting regional development types in the country Ghana (see page 10, 3rd paragraph "Limitations")? According to Table 1 Central and Northern regions only represent a small fraction of the sample!
Response: Thank you very much for this important suggestion. As we stated in the method section, this study is a multiple-method study where the two approaches address different objectives. The quantitative component was used to identify the predictors of child marriage in the broader Ghanaian society which requires a nationally representative data.

The qualitative component was used to explore in-depth the norms and practices surrounding child marriage as well as how the phenomenon could be addressed. The FGDs were conducted in selected UNFPA country program support regions (Northern and Central). These are regions with high prevalence of teenage pregnancy (Central, 21.3%) and child marriage (Northern, 35.8%) (Ghana Statistical Service, Ghana Health Service, & ICF International, 2015). The reason for choosing these two regions have been included in the revised manuscript. See page 7.

Comment 3: Were districts and communities involved in the Focus Group Discussions and Key Informant Interviews selected for this study and if yes, how?

Response: Participants for the FGDs and KIIs were recruited through key contacts in various organizations, Microfin, World Education Ghana and Ghana Health Service in the Central region and NORSAAC, Ghana Health Service and ActionAid in Northern region. The purpose of the study, the target population, as well as period of the study, and other details including mobilization of participants, logistics, transportation and community entry were discussed with the key contacts.

Once feasibility was established, the key contacts identified community volunteers to mobilize eligible participants. The volunteers and key contacts sought audience with the traditional and local authorities approximately 10 days prior to data collection to inform them of the purpose of the study, target groups and key persons as well as seek their permission to conduct the research in their respective communities. These details have been included in the revised manuscript. See page 9.

Comment 4: Explain why unmarried girls aged 12-17 years and 18-24 years participated in the Focus Group Discussions even though only married women aged 20-24 years were included in the quantitative analysis.

Response: The FGDs were used to explore in-depth the norms and practices surrounding child marriage as well as how the phenomenon could be addressed. To address these issues, married 12-24-year olds were asked questions specifically about their lived experiences within marriage, while unmarried 12-24 year olds were asked about their motivations to delay marriage. In addition to the topics covered in the FGD guides, the KII guide inquired on the key informant’s organization, institution or group’s role in addressing the phenomenon. On the other hand, the quantitative data was used to address a different objective (to identify the predictors of child marriage in the broader Ghanaian society) as stated on page 7 of the manuscript (last paragraph before the methods section).

The reason for restricting the sample to women 20 to 24 years old was to ensure that no respondent was still at risk for marriage during adolescence (Erulkar, 2013). In other words, the percentage of girls aged 15-19 who are married or in union at any given time includes girls who are aged 18 and 19 and no longer children, according to the internationally accepted definition. Additionally, the indicator includes girls aged 15, 16 and 17 who are classified as single, but who could eventually marry or enter into a union before the age of 18. By taking a retrospective view, the indicator covering women aged 20 to 24 is not affected by these limitations and so more accurately approximates the real extent of child marriage (United Nations Population Fund, 2012).
Comment 5: Ghana Demography Health Survey (GDHS) and Demographic Health Survey (DHS) should not be used interchangeably.

Response: We would like to thank the reviewer for this comment. Kindly note that Ghana Demographic Health Survey (GDHS) and Demographic Health Survey (DHS) are different and not used interchangeably. DHS is used to refer to the global program while GDHS is used to refer to the country specific DHS. For example, on page 7 (first paragraph under methods), GDHS is referring to the Ghana country specific DHS. On page 29, under ethics approval and consent to participate, we used Ghana Demographic and Health Survey to refer to the Ghana country specific DHS. On page 30, under availability of data and materials, we use Demographic and Health Survey to refer to the global DHS website.

Comment 6: The GDHS reveals that women in the Northern region marry the earliest in Ghana at a median age of 18.7 years and women in Greater Accra marry the latest, at a median age of 23.7 years (GDHS, 2014). It is surprising and irritating that this finding by the GDHS is contrary to the findings in this study. Please provide respective explanations.

Response: We would like to thank the reviewer for raising this important issue which provoked further interrogation of the data. It is true that the 2014 GDHS reported that the median age at first marriage was lower in the Northern (18.7 years) region compared to Greater Accra (23.7 years) region. However, we do not see the findings in this study to be contradictory to the findings in the 2014 GDHS. Firstly, the sample that was used to compute median age at first marriage for women in the 2014 GDHS were women aged 25 to 49 (see page 54 of the 2014 GDHS report), in this study we are looking at women aged 20 to 24. Hence, the samples are fundamentally different. Secondly, the computation of median age at first marriage by background characteristics was a binary analysis which does not take into consideration other confounding factors. This is similar to the analysis in this study in Table 2 where we see that when other confounding variables are not controlled for, women, living in the Northern region appeared to be more likely to marry as children (OR 2.66***). Given that there are so many other factors that can influence child marriage and not just the fact that you are living in Northern region or any other region. The difference between the bivariate and multi-variate analyses is that the multivariate analyses predicts the net effects of each of the independent variables on child marriage controlling for other variables.

We also looked at the statistical analysis again and noticed that the significance level for northern region was at p<.1 and not p<.05.

Based on this analysis, we have revised Table 3 on page 16 by changing the level of significance of Northern region from at p<.05 to p<.1. We have also revised the results section by indicating the level of significance to reflect this change. See page 15.

We also deleted Upper West region from the list of regions that were significantly related to child marriage in the revised manuscript as it was not significant but just showed a similar direction as Northern and Upper East regions. See page 26 of the revised manuscript.

Comment 7: The presentations of results were mixed up with their interpretation. Strict separation of the sections of a paper particularly the presentation of results and their discussion afterwards in the discussion section is recommended.

Response: Thank you very much for drawing our attention to this issue. We looked through the manuscript and revised the results section to ensure that all discussions are moved to the discussion
section. In the original manuscript, we moved the explanation on the relationship between region and child marriage (page 15 of the original manuscript) to the discussion section in the revised manuscript. See page 26.

Comment 8: Some references in the discussion section are missing.
Response: Thank you very much for this important observation. We audited the discussion section and could not find any missing references. Nevertheless, since we are using a citation manager, we deleted the references and inserted them again to ensure all citations in the text appeared in the reference section.

Comment 9: On page 26 in the discussion section, last paragraph, it should read "... in less developed in contrast (instead of "or") to modernised settings (...)."
Response: Thank you very much for this comment. We have revised the sentence that read “in less developed or modernised settings” to “… in less developed settings in contrast to modernised settings …” in the revised manuscript. See page 27.

Comment 10: Strengths and weaknesses of the study should be discussed in a special section of the discussion as well as the possibility of biases (selection bias, information bias).
Response: In the original manuscript we presented the limitation of the study (we did not change the heading because the journal’s guidelines uses limitations), which highlights the strength and weakness of the study under the method section. Based on the reviewer’s suggestion, we have moved the limitation section to page 28 under the discussion section.

Comment 11: What is DUVVSU?
Response: Thank you very much for this question. We believe the reviewer meant “DOVVSU” and not “DUVVSU”. We have spelt out the full meaning of DOVVSU, which is Domestic Violence and Victim Support Unit, the first time it is mentioned in the manuscript. See page 17.

Comment 12: What is UNFPA?
Response: Thank you very for this question. We have spelt out UNFPA, which is United Nations Population Fund (UNFPA), the first time it is mentioned in the manuscript. See page 7.

References