Reviewer’s report

Title: Child Marriage in Ghana: Evidence from a Multi-Method Study
Version: 1 Date: 12 Mar 2019
Reviewer: Alexander Krämer

Reviewer's report:

BMC Women's Health
Child Marriage in Ghana: Evidence from a Multi-Method Study
Reviewer recommendation and comments for manuscript No. BMWH-D-18-00743R1

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:

1) The sample size needed for the quantitative analysis was not calculated and critically reflected.
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 qualititative 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!
3) Were districts and communities involved in the Focus Group Discussions and Key Informant Interviews selected for this study and if yes, how?
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.
5) Ghana Demography Health Survey (GDHS) and Demographic Health Survey (DHS) should not be used interchangeably.
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.
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.
8) Some references in the discussion section are missing.
9) On page 26 in the discussion section, last paragraph, it should read "... in less developed in contrast (instead of "or") to modernised settings (...)."
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).

11) What is DUVVSU?

12) What is UNFPA?

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?
5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

'I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal