Author’s response to reviews

Title: Is a woman's first pregnancy outcome related to her years of schooling? An assessment of women's adolescent pregnancy outcomes and subsequent educational attainment in Ghana

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Dear Editor-in-Chief:

My co-author and I are resubmitting our manuscript titled “Is a woman’s first pregnancy outcome related to her years of schooling? An assessment of women’s adolescent pregnancy outcomes and subsequent educational attainment in Ghana” for publication in your Journal. We are grateful for the chance to resubmit and have done our best to address the reviewers’ concerns.

Comments from Reviewer 3:

- "Young girls are more prone to the use of unsafe abortion methods”. No reference for this statement is provided.

Response: We failed to include the reference to the statement mentioned above because it is part of the conclusion section in our abstract. However, in the Discussion section of the paper (page 20; line 453) we provide the Sundaram et al. (2012) reference to the statement about younger women in Ghana being more prone to unsafe abortions.

- It might be worth explaining in the Methods section why you combined the responses of women who had miscarriages and stillbirths.
Response: In the Data and Methods Section, under the Variables sub-heading, we have included a short sentence explaining why we combined miscarriages and stillbirths and also refer the readers to the data limitations section which provides a more detailed explanation.

- Grammatical error in line 264: "It is highly likely that some of the younger one's may still be in school." Should say "ones" instead of "one's"

Response: The word “one’s” has been changes to “ones”.

- Sentence on lines 310-11 "As the number of abortions increased, the proportion of women reduced drastically." Is unclear. The proportion of women doing what decreased?

Response: We intended to state that the proportion of women in the sample declined as the number of women who had abortions increased. We have modified the sentence to provide more clarity to the sentence.

- Sentence 313-14 is also unclear "The characteristics of the ever been pregnant only women were very similar to all women." Is this saying that the women who had been pregnant have similar characteristics to all the women who had never been pregnant?

Response: The statement has been modified so that it suggests more clearly that the background characteristics of both groups of women (all women and ever been pregnant women) had similar proportions across the categories. The differences between them in terms of their characteristics are stated in the subsequent sentences.

Comments from Reviewer 4:

- Full Title: Relation of women's first pregnancy outcome with her years of schooling has been studied many a times and is well proven. But building evidence for subsequent educational attainment may require an in-depth study and data on years of schooling thereafter, besides the age at first pregnancy.

Response: We understand the challenges in using cross-sectional data to assess the relationships we are interested in. However, we feel that our study title does reflect what we intended to study as we provided some evidence that among women in Ghana, their first adolescent pregnancy outcome may have implications for educational attainment later on in life. We have, however,
modified the original title to reflect exactly what the paper sought to examine, i.e. to relate adolescent pregnancy outcome with a woman’s educational attainment level at the time of the survey. We have modified it slightly by substituting the word “women’s” for “girls’” and so it now reads: “Is a woman’s first pregnancy outcome related to her years of schooling? An assessment of women’s adolescent pregnancy outcomes and subsequent educational attainment in Ghana”

- Hypothesis: The author may consider reviewing the first hypothesis ‘Women whose first pregnancies ended in an induced abortion will have higher levels of schooling than those whose first pregnancies ended in a live birth.’ It gives rise to a reverse and rather proven hypothesis that women with higher levels of schooling will go for induced abortion than giving live births. And there could be reasons to it as higher the education one can be more informed about sexual and reproductive health and rights including abortion rights. Therefore, post pregnancy data on years of schooling could be more valid to correlate it with the pregnancy outcome.

Response: We appreciate this comment but would like to state that hypothesis 1 is supposed to indicate the reverse of what the reviewer has stated. We are arguing that women who abort their first adolescent pregnancies, hence chose to terminate their first pregnancies rather than give birth as adolescents, are likely to have higher educational attainment levels in future. We want to refrain from stating the reverse which is that those with higher educational levels are those aborting their unintended pregnancies.

- The data limitation has been mentioned in line 250-251, as there is no information available on whether pregnancies occurred before respondents ended their education or vice versa. Even though mean years of schooling was calculated, the data table does not give enough insight whether the years in school was higher subsequent to first pregnancy outcome or before it.

Response: Due to data limitations, it is not possible to acquire information about the women’s educational attainment levels at the time of the first pregnancy; there is only information about their “current” educational attainment levels (at the time of the survey). This is therefore a limitation to the study. We have revised the limitation to reflect this additional information about no data to measure years of school other than at the time of the survey.
Combining still-births and miscarriages as spontaneous abortion or assuming their aspirations with that of those who had gone for induced abortion may not be logical without any primary data.

Response: We acknowledge the reviewer’s comment but unfortunately do not have any primary data to base our assertion on as suggested. Studies that utilize the GDHS “pregnancy loss - abortion” variable which is comprised of induced, spontaneous and still births typically argue that the merged variable still provides an acceptable indication of abortion. Along these lines we also perceive this and have explained this as a data limitation to the study.

Also, we know that biases against informing about induced abortion could be very high, especially among those between 20-29 years at the time of survey in comparison to the older ones. It has already been discussed by the author, It is likely that a many cases of induced abortions could have been reported as spontaneous. Very similar to observation in developing countries, that infant death (if within a few hours) is often wrongly reported as still births. In such cases, the statement does not seem to have enough reasoning to stand as a hypothesis as the case could be vice versa as well.

Response: As the reviewer has mentioned, it is likely that the spontaneous abortions may be misreports of induced abortions. Despite this, we believe it is still important to also assess whether young girls who report losing their pregnancies “involuntarily” also go on to have higher educational attainment levels compared to those who give birth. From the findings we see that the women with spontaneous terminations are different from the young girls aborting their pregnancies knowingly, and hence this finding is worth noting under a separate hypothesis. We have included information in the data limitations sub-section of the methods section about the misreporting of the abortion.

Discussion: Some insights into efforts towards promoting sexual and reproductive health in Ghana among adolescents and women in reproductive age group would have been interesting.

Response: We have included a sentence on current efforts that being undertaken to promote SRH among young women in Ghana in the final paragraph of discussion section of the paper.

Results: Referring to Table 3, 44% of the respondents have 'no pregnancy' (no pregnancy below 20 years of age) as an outcome and 12.9% had experienced at least one abortion. In this situation, an analysis of data, if available on knowledge and use of contraceptives in adolescent age group would have been helpful. Also, if there is any finding on age at first
sexual encounter in context of adolescents in Ghana that could add value to the conclusion para.

Response: We are not too clear on the first part of the comment by the author, however, we will provide an answer based on our understanding of the comment. We have incorporated into the final paragraph of the discussion section some information about adolescents’ knowledge and use of contraception in Ghana. In addition, information on the age at sexual debut of adolescents in Ghana has been incorporated in the final paragraph of the discussion section to help understand the sexual context within in which adolescents operate.

- Also, there were more women as rich in younger lot than other cohorts whereas more in urban areas in 30-39 years. It will be helpful to consider that women from richer family and in urban areas have more access to technological methods and facilities for induced abortions, that could be safe as well.

Response: We are grateful for this observation by the reviewer; however, as we controlled for wealth and place of residence in our models we do not believe that the effect of these would have influenced the final regression results.

- Recommendation: In depth study with adolescents to understand their knowledge on contraception, abortion, and aspirations (which may be for education or may not) could give more insight into the purpose behind deciding either to abort or to continue pregnancy. Aspirations, among adolescents may be high for different reasons and purpose, not necessarily education.

Response: We agree with this observation by the reviewer that in depth studies are needed to understand the issues better, and also, young people’s aspirations may be for other achievements apart from education. These insights have been incorporated in the final paragraph of the discussion section of the paper.

We are grateful for the opportunity to revise the manuscript and look forward to a favourable response from you.

Yours sincerely,

Adriana Biney (Corresponding author)