Author's response to reviews

Title: To use or not to use a condom: A prospective cohort study comparing contraceptive practices among HIV-infected and HIV-negative youth in Uganda

Authors:

Jolly Beyeza-Kashesya (jbeyeza@yahoo.com)
Frank Kaharuza (fkaharuza@gmail.com)
Anna Mia Ekström (Anna.Mia.Ekstrom@ki.se)
Stella Neema (sheisim@yahoo.com)
Asli Kulane (Asli.Kulane@ki.se)
Florence Mirembe (flomir2002@yahoo.com)

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Author's response to reviews: see over
Ms Roxane Rajabi  
The BioMed Central Editorial Team  

Dear Ms Roxane Rajabi,  

We would like to thank the reviewers for their useful comments. We are pleased to submit a revised manuscript that addresses the concerns raised by the reviewers.  

**Reviewer (Audrey Pettifor)**  

Reviewer’s comment  
*The background section, while containing important and pertinent information needs better structure. Currently it is all one large paragraph with many topic sentences and key ideas/concepts. This should be broken down into a couple of key paragraphs with key topic sentences that lead in and set the ground for the story this data is going to tell. I think the information is there it just needs to be more clearly structured.*  

Response  
Thank you for this observation.  
The background section has been restructured to improve presentation of the key concepts- we have increased the paragraphs to 4 paragraphs and improved the segue of ideas. We have also had an English language editor go through this version of the manuscript.  

Reviewer’s comment  
*Overall the paper needs a lot of work on better structure, English Language needs editing for grammar and readability*  

Response  
All the co-authors reviewed the manuscript. We also had an English language editor to review the paper and we have incorporated most of his comments.  

Reviewer’s comment  
**Methods:** Please clarify how change over time in contraceptive use/uptake was determined? Were only youth who were not using contraception at baseline considered and then did you look at uptake at 6 months and compare to baseline and then compare 6 to 12 months or did you compare 12 months to baseline?  

Response  
We apologize for the lack of clarity. At baseline, the youth not sexually active at the time and the sexually active youth not using contraception were considered eligible for follow-up for contraceptive use. At 6 months and 12 months participants were asked if they initiated or stopped using contraception in the preceding six months. We have since clarified and it reads:  

“At baseline all sexually active clients were considered eligible to use contraception. At six months follow-up, all sexually active clients who were not using contraception at baseline or were abstaining from sex at baseline but became sexually active and initiated contraceptive use we considered “contraceptive uptake”. This criteria was also used at twelve months follow-up to estimate the contraceptive uptake in the
previous six months. Table 2 shows the total contraceptive uptake during the twelve months.”

In addition we have clarified discontinuing contraceptive use and it reads: “At six months follow-up, all respondents who were using contraception at baseline but stopped contraceptive use we considered “discontinued contraception” . At twelve months follow-up, all respondents who were using contraception at six months but stopped contraceptive use were considered to estimate the discontinued contraception in the previous six months.”

Reviewer’s comment
*Given you have repeated measures and longitudinal data it seems more advanced longitudinal methods could be used and increase power to detect an effect (GEE perhaps?)*

Response
Thank you for this concern. We had extensive consultations with the statisticians about using repeated measures analysis. This was considered inappropriate because we had only 3-time point’s baseline 6 months and 12 months and the outcome measures were a proportion at the different time points. We could not reconstruct the outcome measures at multiple time point. It was therefore decided to analyze this data this way. We have discussed this as a limitation of the study. It reads: “This study was not able to do advanced analyses suitable for longitudinal studies because we had only 3 time point’s baseline 6 months and 12 months and the outcome measures were proportions at the different time points. In addition, the twelve months follow-up period was possibly too short and thus any differences we see could be temporary. A longer follow-up with more time-points measurements would give a better picture”

Reviewer’s comment
*From looking at Table 2 and 3 it seems like you are not using the 6-month data which seems like a waste of data when that could be informative to your analysis?*

Response
Table 2 and 3 shows the dynamics of contraceptive use during the twelve months period. The six and 12 months data was used and we have clarified this in the methods section and at the description of the data in the results section. It now reads: “Table 2 and 3 describes the dynamics of contraceptive use during the twelve months period. During the one-year follow-up period, HIV-infected youths were less likely to consistently use contraception compared to HIV-negative youths...”

Reviewer’s comment
Results: Contraceptive behavior: the data presented needs greater structure.
*Again, a lot of different figures are provided, it is rather confusing what is being described and the story that is being told. Please work on structuring the data so that it is better ordered and easier to follow.*

Response
We apologize for the lack of clarity and flow of information.
We have improved the structure and presentation of the results. We have the baseline descriptive characteristics, the contraceptive use at baseline, and the trends or dynamics of use during the 12 months follow-up.

Reviewer’s comment
In the section data management and analysis it says “The outcomes of interest were: desire for children, condom use and contraceptive use.” While under the section titled “participant recruitment” it says, “The main outcomes of the study were modern contraceptive use (both uptake and discontinuation of contraception), pregnancy, and condom use.” Please rectify between the two sections.

Response
Thank you for the observation. We have rectified the inconsistency in presenting our outcomes. We have deleted the sentence from the sampling and data collection section and maintained it in the data analysis section. Page 7 line 7. It reads: “The outcomes of interest were desire for children, condom use and contraceptive use (both uptake and discontinuation).”

Reviewer’s comment
In addition, the section titled participant recruitment contains info on sample size and measures. so not sure the title is appropriate for the whole section

Response
We have changed and added “sampling and data collection” as a section to contain sample size and measures.

Reviewer’s comment
Background: “The majority of one fifth (1.2 billion).” please re-word. the phrasing is awkward

Response
We have revised and structured the sentence. It reads: “Globally, young people between 15 and 24 years make 1.2 billion of the world’s population. The majority live in Sub-Saharan Africa and are vulnerable to unwanted pregnancies and HIV infection.” Paragraph 1 page 3 line 2

Reviewer’s comment
Background: “…. gender vulnerability and disparity in sexual practices.” It is not clear that the disparity in HIV prevalence between young men and women is do to differences in sexual practices per se? If there is please cite data. on the whole, young men report ‘riskier’ behavior than young women in this age group (ie, more sex partners, earlier coital debut)

Response
Thank you for this addition. We agree that young men have more sexual partners and earlier sexual debut but the girls tend to have older men (intergenerational sex) which put them at a higher risk of HIV. We have revised the sentence and it reads: “In Uganda, HIV prevalence among the 15 to 17 year olds is 0.3% and 1.9% for males and females respectively. It is higher at 2.3% and 5.5% among the 20-24 year olds [1], indicating gender vulnerability and disparity in sexual practices. This is
especially true when girls engage in cross-generational sex with older men, often with compromised negotiation for safe sex [2].”

Reviewer’s comment
Background: “Only 5% of sexually active young people aged 15 to 19 years and 18% aged 20 to 24 year old used contraceptive methods, leading to very high rates (40%) of unintended and often unwanted pregnancies among the adolescents” Please add a citation for this data

Response
The citation has been added. It reads:
“Only 5% of sexually active young people aged 15 to 19 years and 18% of those aged 20 to 24 years use contraceptive methods, leading to very high rates of unintended and often unwanted pregnancies among the adolescents [3]”

Reviewer’s comment
Methods: The information on questionnaire design should be a separate paragraph from the sample size calculation paragraph

Response
Thank you. It has been done.

Page paragraphs 2 and 3

Reviewer’s comment
Methods, participant recruitment, please clarify if these eligibility criteria are for positive or negative youth ‘Young people, who knew their HIV status for at least six months before recruitment date; were resident with a radius of 30km of the clinic, and not intending to relocate residence within two years were eligible for the study.”

Response
We apologies for not stating clearly the inclusion criteria. Both HIV infected and negative had the same inclusion criteria. This has been clarified and it reads:
“Young people, who knew their HIV status (negative or positive) for at least six months before recruitment date; were resident with a radius of 30km of the clinic, and not intending to relocate residence within two years were eligible for the study.”

Reviewer’s comment
Why did you exclude HIV positive youth from NTIC?

Response
Thank you for this observation. NTIC does not offer follow-up HIV care for those who test positive. They are referred to other units with established HIV-care systems like TASO, IDC etc. There would therefore be a possibility of recruiting clients we got from TASO Mualgo who attend at NTIC for other services. Indeed, we saw there some clients who we had at TASO Mulago attend some activities at NTIC. We have modified the sentence in the text to read:
“The HIV-infected youth attending at NTIC were excluded from the study to avoid double recruitment since NTIC does not offer specified HIV care and refers those needing antiretroviral treatment to other units like TASO or IDC. However, they keep coming to NTIC for other services”.”
Reviewer’s comment
Figure 2- what does the x-axis represent? If it is percentage why does the scale go to 120? Please label the axes. The label says this is contraceptive behavior at baseline and 12 months but I do not see baseline or 12 months indicated in the data..rather it seems a difference between HIV positive and negative participants? Please clarify. The text also says this Table is a sub-sample? Who is the sub-sample, please clarify.

Response
X-axis represents the percentage. It has been clarified on the figure 2. In addition the figure has been revised to exclude 120. For clarity, we have included the numbers on the bars representing the proportions. The sustained contraceptive use and sustained non-contraception refer to the 12 months follow-up. The blue and red bars shows the differences in contraceptive use among the HIV-infected and negative youths. The text says this is a sub-sample because out of the total sample, we considered only those who were sexually active.

Reviewer’s comment
Table 2, please clarify, so in the column labeled contraceptive use at baseline, this is the percentage of youth reporting using contraception at baseline stratified by various co-variates (the rows). For the column heading then “discontinued use at 12 months”. This is then of those who were using contraception at baseline. that is the denominator? And for the uptake columns, the denominator was those not using contraception at baseline? Please clarify in the text or methods.

Response
We again apologize for the lack of clarity. We have clarified in the methods and added a footnote on table 2 to explain that. See table 2

• Column labeled contraceptive use at baseline is the percentage of sexually active youth reporting using contraception at baseline stratified by various co-variates (the rows).
• Column heading then “discontinued use during the 12 months’ follow-up”. This is includes those who were using contraception at baseline plus those who became sexually active, started use and discontinued by end of follow-up.
• Uptake columns, the denominator comprised of those not using contraception at baseline including those who were abstaining but later started having sex.

Reviewer’s comment
What are the p-values for? Differences at baseline between co-variates in that variable (ie, difference in baseline use by age) or are you showing changes between baseline and 12 months?

Response
The p values show the significance in the differences between co-variates in the variable e.g. baseline contraceptive use by age, gender, HIV status or marital status.
Reviewer: Busisiwe Nkala

Reviewer
Discretionary Revisions
1. Contraceptive uptake defined as “adoption” – does this mean initiating i.e. for the first time? Consider using a term that is less ambivalent

Response
Thanks you for this concern. We have now revised the definition to read:
“For this study, contraceptive uptake was defined as initiation of contraceptive use by 6 and through to 12 months after baseline among the youth who were sexually active but not using a method. It included those who were abstinent at baseline but later became sexually active.”

Reviewer
Minor Revisions
2. Clarify if the polygamous relationships applied to both male and female

Response
Yes it does apply to both men and women. When a woman has a husband who has another wife, she is still in a polygamous relationship. This is different from multiple partners where we count individuals partners.

Reviewer
3. P12, paragraph 2, line 5 there is missing text “in Eastern Uganda (it was) reported…..”

Response
Thank you this has been rectified to read:
A study from Eastern Uganda reported that HIV-infected people who knew their HIV status were three times or more likely to use a condom at their last sexual activity compared with those who did not know their status.

Reviewer
4. P12, paragraph 2, line 10 spelling – change “initiave” to “initiate”

Response
This was a typing error. It has been rectified
It reads: to initiate…

Major Revisions

Reviewer
5. It will help with the focus of the paper if the authors can define the following terms as it pertains to this paper:

5.1 Modern contraceptive (page 6) “The main outcomes of the study were modern contraceptive use………..
5.2 Family planning (page 7)
5.3 Contraceptive uptake
**5.4 Protection (p5)**
The above terms have been used interchangeably in the document and as such tend to confuse e.g. “condom and contraceptive” page 13 and “condom as contraceptive”

Response.  
We apologise for the confusion. We have gone through the document and corrected the terminologies to be consistent.

**Reviewer**  
6. **Revise the first sentence under discussion.**

**Questions for clarity**

Response  
The sentence was revised to read:  
“In this population, contraceptive use among the HIV-infected youth was significantly lower than that among HIV-negative youth.”

**Reviewer**  
7. There was a question on condoms efficacy for HIV prevention, was there a question on efficacy for pregnancy?

Response  
No, there was no question on the efficacy for pregnancy and we agree this was an oversight since the paper is discussing contraceptive use.

**Reviewer**  
8. The two groups being studied were recruited from different setting, with the possibility that they were counselled in a way that addressed the adolescents presenting problem (e.g. TASO offered counselling for dealing with the fact that adolescents are infected), how much influence did the recruitment centres and type of service received prior to being enrolled in the study had on their knowledge and behaviour. Will the authors show how they controlled for this as a confounder?

Response  
Thank you for this observation. We also wondered whether the services or youth different between Naguru and TASO. We used the discussion with the health workers as a proxy for the type of service received. In Figure 2 there are significant differences in discussion about pregnancy, non-significant differences in condom use but borderline significance in contraceptive use. We developed a composite indicator combining all discussions with health workers (discussion about pregnancy, birth spacing and contraceptive use) that can be used as a proxy to the impact of the two centres on the knowledge and behavior of the individuals (table 3). The difference was borderline significant with the HIV-infected more likely to discuss with health workers. In addition, looking at Table 3- the Adjusted OR and Crude OR for health worker discussion was only a 10% change in the estimate which may not suggest confounding. Similarly, analysis with some few variables – (discussion and HIV status), and sustained or continued contraceptive use as the outcomes did not have significant changes in the Adjusted OR and Crude OR which may suggest that there is no confounding.
Reviewer
9. Was the 11% negative and 5% positive who were pregnant at the time of recruitment enrolled into the study?

Other general but important points to consider

Response
In the follow up, the denominator for contraception variable included the sexually active who could potentially get pregnant. Therefore we did not have the pregnant participants answer the question on contraception.

Reviewer
10. Suggestion that increased reported birth in the 15 – 19 year old infected adolescent is an indication of unmet need for pregnancy prevention may be an assumption, would this not be a fertility desire?

Response
Thank you for this suggestion. However, the participants had we considered the questions on the desire for children and when they would like to have the children. More than 90% in both groups reported that they wanted to have the children more than 4 years later, which indicated no current desire hence should ideally be using contraception at that time. See results section page 9 line 17, it reads: “Of those who desired children, more than 90% in both groups wanted to have them after four years from the time of interview.”

Reviewer
11. Need more exploration of dual protection and more information on why the youth in the study used condoms – it does seem that the link of condom use to prevention of HIV transmission may have a bearing on why the HIV infected youth may not have shown increased condom use. If possible can authors look at the data for this linkage?

Response
This may seem to be a plausible explanation, but our data has no power to make such an inference. Data from a study in adults in Eastern Uganda report a sense of altruism and a struggle to protect the partners by HIV-infected people [4].

References