Reviewer’s report

Title: Prevalence and correlates of sexual intercourse among sexually active in-school adolescents: an analysis of five sub-Saharan African countries for the adolescent’s sexual health policy implications

Version: 0 Date: 16 Mar 2019

Reviewer: Marie-Claude Couture

Reviewer's report:

GENERAL COMMENTS
This is an interesting study and few studies have examined the clustering of risk behaviors among adolescents in sub-Saharan Africa. I would suggest to conduct multivariate regression models stratified by gender since it seems that there is a difference among females and males. Also, the authors should discuss more their results of the outcome variable "sex with multiple partners", which is an important risk factors of HIV and STI acquisition. Overall, the manuscript needs some revisions and editing.

ABSTRACT
- Background Line 53. I would suggest "unprotected" sexual intercourse.
- Results Lines 42-45: I would suggest to present % for prevalence and instead add n in parentheses.
- Results Lines 50-53: Please label the associations as adjusted odds ratio (or aOR) and also the 95% confidence intervals as 95% CI.

BACKGROUND
In general, I would suggest to focus the background section on information related to sub-Saharan Africa context and add appropriate references. The authors should discuss more previous research on risks related to early sexual initiation and having multiple sex partners. Overall, the rationale for the study could be stronger.

- Page 3, Lines 42-46: References 3 and 4 are not appropriate for this sentence. I would suggest to add references related to how early sexual initiation among adolescents is related to those risks.
- Page 3, line 44: I would change for sexually transmitted "infections". And change in other places in the manuscript.
- Page 3, Lines 46-49: Again, I don't think the references 5 to 7 are the most appropriate for this sentence.
- Page 4, Lines 12-25: If possible, I would suggest to report data on incidence (or prevalence) as well as mortality rates among adolescents for HIV and some other ITS in sub-Saharan Africa. And also add data on unwanted pregnancy rates. That will give us a better idea of the burden of these problems in this population. Also, what is the prevalence of HIV testing in this population? That could be good information to add.
- Page 4, Lines 35-40: I don't think this reference among US adolescents is appropriate since it also does not really show higher risk of HIV, STI and pregnancies. I would suggest to add more appropriate references, if possible in the sub-Saharan African context.
- Page 4, Lines 35-40: I would suggest to add some # for the prevalence of early sexual initiation to give the readers a better idea.
- Page 4, Lines 46-50: The reference #15 is not appropriate here since it does not even look at substance use. Same for #16, which does not even examine sexual behaviors, but psychological distress. The
authors need to add references related to how clustering of risk behaviors, such as substance use, increases risk of early sexual initiation.

METHODS

- Were there any eligibility criteria (inclusion and exclusion)? If so, I would add them.

- Sampling technique and sample size section: This section also discusses data collection. I would add that in the title then. Also, how that information was collected? Was it an interviewer or self-administrated questionnaire? I would add this information.

Table 1: This table could be added in an appendix. Instead the authors should include a table with the sociodemographic information of the study sample (age, sex, etc) as well as the prevalence of independent variables. That will give us a better idea of the participants.

- Dependent variables section, Lines 10-12: The first sentence is misleading and I would change it. Not all sexual intercourses lead to HIV/STI. More unprotected ones. Also, this is not what the question measured. It only measures prevalence of sexual intercourse. There is no need to add the "code 1,2" used for the data analysis anywhere in the variables section. I would remove that. Also, did the authors examine "condom use" as another outcome? Because unprotected sexual intercourses are more likely to increase risk of HIV. I would suggest to look at that too.

- Independent variables section, Line 30: No need to add the codes use for the data analysis. Instead I would suggest to write (Variable dichotomized as "0 day" and "1 ≥day"). I would do the same for the other independent variables. I would report the categories for gender and age (if any). The authors examined "any alcohol drinking" as a correlate. But have they looked at unhealthy or heavy alcohol drinking? That could be a better correlate of risky sexual behaviors. I would suggest to look at this too.

- Data analysis: The authors present the data in Table 2 stratified by gender, showing a clear difference in sexual intercourse and sex with multiple partners between males and females. I would suggest to also stratify the multivariate logistic regression model by gender. I suspect that we will see a difference among females compared to males. If so, I would suggest to re-frame the manuscript in that direction.

- Page 10, Line 20: It is "Chi-square". Did the authors used a t-test to examine the associations of the dependent variables with age (continuous)?

- Page 10, Lines 27-30: I thought there were 2 dependent variables? What about sex with multiple partners? Were age and gender considered potential confounders in the model? If so, I would discuss that. Were there any other potential confounding variables adjusted for? Like mental health status?

- Page 10, Lines 30-32: The authors should also report that they calculated 95% confidence intervals.

RESULTS

- Page 10, Lines 46-51: I would suggest to present % for prevalence and instead add n in parentheses. Are you sure it is only 20.9% for multiple sex partners? Because according to the table 2, prevalence among males is about 70%. I would be surprised that added together it will give 20%.

- Page 10, Line 58: Add the p-value in parenthesis.

- Table 2: The authors should add the numbers for the p-value column. Also, for Benin, it should be "Sex with multiple partners". Make sure to stay consistent in the terminology.
DISCUSSION
Overall, I feel the discussion could better structured around main findings and discussed more previous similar research in SSA.

-Page 12, Lines 50-53: And also the prevalence of sex with multiple partners. I suggest to the authors to discuss more about this important result, since this is an important risk factor of HIV infection.

-Page 13, Lines 12-14: I would suggest to compare to other studies in SSA.

-Page 13, Lines 15-21: Please add a reference for this statement.

-Page 13, Lines 29-33: And more especially having sex with multiple sex partners, which is an important driver of the HIV epidemic. I would discuss that more.

-Page 14, Lines 21-28: I would suggest to focus the discussion on the clustering of risk factors related to HIV, STI and pregnancy, which is the topic of the article.

-Page 14, Lines 46-50: This is not in the contrary but results supporting the previous evidence. Also, I am not sure that all the cited studies measured parental connectedness. For example, #35 looked at parental smoking status, which is different. I would suggest to verify that and be careful about the way these results are reported. Are there other studies showing the protective effect of family on sexual behaviors among adolescents? That would be good to add here too.

-Limitations: There are many potential confounding variables for these associations that were not measured or taken into considerations. I would discuss that more.

CONCLUSION
-Page 16, Lines 10-12: And also the prevalence of sex with multiple partners.

-Page 16, Line 17: Use "parental connectedness", not parental care which is a different concept.

-Page 16, Lines 17-19: Not only sexual intercourse, but especially sex with multiple partners. This is an important risk factor of HIV and STI acquisition.


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

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