Reviewer's report

Title: Sexual and reproductive health behavior and unmet needs among a sample of adolescents living with HIV in Zambia: a cross-sectional study

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Reviewer: Kirsty Brittain

Reviewer's report:

The authors investigated sexual and reproductive health behaviours and needs among HIV-positive adolescents in Zambia. This manuscript is notable in that it addresses a crucial issue in an important and neglected population: sexual behaviours among HIV-positive adolescents in Zambia. Overall, this manuscript would benefit from a thorough editing of grammar and language. I have provided detailed comments on specific aspects of the manuscript that I believe require attention below:

1. The title of this manuscript states that this is a mixed-methods study. I am not sure whether the use of only one methodology (a survey) qualifies as mixed-methods?

2. The authors state in the Background section that rapid physical and psychosocial development during adolescence could complicate challenges related to sexual and reproductive health (line 86). The authors should also include some discussion of how delayed development (e.g. delayed pubertal onset, which is common among perinatally-infected adolescents) may impact sexual and reproductive behaviours.

3. In lines 88-91, the authors present data on sexual behaviours among HIV-positive adolescents in other settings. The authors should include information about the age of the adolescents in these samples in order to allow a comparison with their results.

4. In line 106, the authors state that fertility intention was "high" among adults. The authors should be more specific and present results in terms of what proportion of adults intend to have children.
5. In lines 117-118, the authors state that "a major route of HIV transmission in early adolescence is maternal transmission". This sounds as though transmission is occurring when these children are young adolescents (i.e. not during pregnancy/postpartum) and should be rephrased.

6. In lines 119-121, the authors state that adolescents "share common characteristics". It is unclear what this means. Do the authors mean that these behaviours are common among adolescents? Not all adolescents will experience the health outcomes listed.

7. The authors refer repeatedly to "concerns about marriage". It is unclear what this means and how it was assessed. Further details should be provided in the Methods section.

8. Did the authors collect data on the route of HIV infection? This would be a crucial predictor of sexual behaviour, and all adolescents infected through sexual transmission would, by definition, have a history of sexual behaviour.

9. In Table 2, there appears to be a lot of missing data, for example 15 adolescents did not report their age at first sexual intercourse, and 17 did not report their partner's age. This has major implications for the validity of findings, and should be addressed. Many variables also include a high proportion of adolescents who declined to answer. What implications does this have for the validity of these results?

10. The two outcomes of interest in this analysis were frequently reported (49% of adolescents reported concerns about marriage, and 87% reported a desire to have children). Given that the outcome is common, logistic regression may not be an appropriate method of analysis. Did the authors consider using other regression models?

11. The authors should include a justification for their model building approach, for example why they decided to adjust for particular variables in the adjusted models.

12. Did the authors explore the impact of age on the outcomes of interest? This would seem an important variable to consider. I also recommend adjusting all models for age.
13. In Table 5, the confidence intervals are extremely wide for some categorical variables because of the low number of adolescents in each category (for example, educational experience). Did the authors consider collapsing these variables into fewer categories?

14. The authors should include details of what services were offered to adolescents reporting risky sexual behaviours in this study.

15. The authors should also include details of what sexual and reproductive health services are routinely offered to HIV-positive adolescents in this context. For example, do health care workers routinely discuss sexual and reproductive health issues with adolescents who are engaged in HIV care?

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