Reviewer's report

Title: The significance of Lactobacillus crispatus and L. vaginalis for vaginal health and the negative effect of recent sex: a cross-sectional descriptive study across groups of sub-Saharan women.

Version: 2
Date: 6 November 2014
Reviewer: Melissa Herbst-Kralovetz

Reviewer's report:

Overall this is a well-written, large cross-sectional study that aimed to characterize key members of the vaginal microbiome across groups of African women. The question posed by the authors is well defined. The methods are appropriate and well described. The data are sound and the figures appear to be genuine. There is a section that outlines the hurdles faced during the data analysis. The title and abstract accurately convey the findings of the study.

The manuscript could benefit from additional discussion and comparisons to recently published work in this arena and those suggestions are indicated below. In addition, the authors could point to future directions or areas in which they will expand based off of the data generated in this report.

- Discretionary Revisions
  1. For the additional files, the references are not integrated into the overall reference section of the manuscript. Suggest incorporating.

- Minor Essential Revisions
  1. It would enhance the conclusions to include a future studies or directions at the end of the manuscript.

- Major Compulsory Revisions
  1. In results section the percentages are clearly outlined, but it does not include references to the particular tables or figures where the data can be found. Suggest including those references throughout.
  2. In results section there is no mention of the correlation or lack of correlation between educational or marital status, please incorporate these results in this section.
  3. Many behavioral factors outlined in the additional files are not presented in the results section nor are they discussed later in the manuscript. It is not clear why this data is included if it is not going to be included in the results or discussion. Suggest revising.
  4. The pH findings should be discussed in the context of the literature in other reported/published data sets and among women from different geographical areas (Europe, US, etc.).
5. The increase in Lactobacilli in pregnant populations should be discussed in the context of recent reports (Romero et al, Microbiome, 2014 and others) on the vaginal microbiome in pregnancy.

6. A discussion on parity and changes in vaginal microbiota should be added along with a discussion as to why the authors think that L.vaginalis and L.iners prevalence decreases with increased parity along with the strong association with Candida. Have other groups shown these associations?

7. In the section (lines 422-435) there is a recent report by Benning et al, PLoS ONE, 2014 that investigates the vaginal microbiota profiles in HIV women from Rwanda..those findings should be discussed in the context of this manuscript and in this section of the discussion.

8. Other vaginal microbiome studies have shown that douching and other feminine hygiene practices impact the vaginal microbiota profile, as such the authors should discuss and hypothesize why they did not observe this in their study. Is this due to different practices, timing, etc.?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.