Reviewer’s report

Title: Cervical precancerous changes and selected cervical microbial infections among women attending Family Health Option Clinic in Thika, Kiambu County, Kenya, 2014: A cross sectional study

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Reviewer: Moses Masika

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Article title: Cervical precancerous changes and selected cervical microbial infections among women attending Family Health Option Clinic in Thika, Kiambu County, Kenya, 2014: A cross sectional study

The aim of the study was to determine the prevalence of cervical precancerous changes and selected cervical microbial infections among women attending a reproductive health clinic in central Kenya for Pap smear testing.

The paper addresses two topical issues in Kenya - Cervical cancer and cervical microbial infection.

In my view, it requires major revisions before publication. Areas that need some work include:

1. TITLE: The title can be shortened by removing the clinic name which is long

2. Abstract:

   - Line 32: specify the type of clinic the women were attending. Leaving it open implies a general clinic which does not sit well with the first statement under results - '97.5% of the women had cervical inflammation.'

   - Under methods, specify how cervical inflammation was determined as this is a key finding
3. Introduction

- This statement is incorrect: "In Kenya, cervical cancer is the leading cause of morbidity and mortality among women (Bruni et al., 2014)"

- The introduction should also state the burden of cervical cancer in Kenya as well as the prevalence of the microbial infections of interest

- Other important areas to cover would be the recommended age and frequency for cervical cancer screening and the reasons why coverage is so poor.

4. Methodology:

- Line 66: Delete 'prospective'

- Yeast cell infection was the most common among microbial infections. Candida often causes vulvovaginitis but it is also normal flora in the female genital tract. How did you differentiate normal flora from infection? How did you pick out inflammation caused by Candida?

- Did you collect any data on antimicrobial use prior to the visit?

- Was culture done for the HVS especially for Neisseria gonorrhoea and Actinomyces?

- Briefly describe how data was stored rather than stating that 'data was stored properly'

- The statement that 'There was no risk involved in Pap smear and HVS specimen collection' is incorrect

- In this section (methodology), you should state how you arrived at your sample size.

- For the each of the various statistical techniques mentioned, give examples of the variables tested
5. Results:

- This section should be organized better by reporting related data together: e.g. you could have a section on participant characteristics, a section on risk factors for cervical cancer and infection, a section on cervical cancer, on infections, etc.

- Use punctuation appropriately. There are many inappropriately placed commas.

- Ensure appropriate use of the words 'most' and 'majority' in the results and discussion sections. 20% is not majority and 50% is not most.

- Data reported on line 126/127 is misinterpreted: "The odds (OR: 1.11, 95% CI: 0.23-5.23) of cervical precancerous changes in women who were married was one time higher that of non-married women."

- '77.5% of microbial infections were yeast cell'; any chance that some of these were just normal flora?

- What was the basis (standard) for the sensitivity reported in line 138? ‘… HVS wet preparation had the 'highest sensitivity' to inflammatory changes and their causes.’

- What was the basis (comparator) for the odds given in line 141? "Use of IUCDs (OR: 2.47, 95% CI 1.3-4.6) was associated with having cervical inflammation."

6. Discussion

- The first paragraph in this section should report the two or three key findings of the study not just CIN

- When the data being discussed is derived from a small sample, it is more accurate to report the absolute numbers, not just the percentage e.g. 2 out of 10 rather than 20%

- Specify the country in line 170: 'This is important in a country where 157 60% of cancer victims are below 70'
When you cite studies for comparison, it is more informative to state the population where the study was conducted rather than the full name of the research centre or site. E.g. 'A study in women seeking care at a reproductive health clinic in Pakistan,' rather than, 'A study done at Nishtar Hospital Multan and Multan Institute of Nuclear Medicine & Radiotherapy (MINAR) in Pakistan.' Make your sentences short, concise and unambiguous.

Line 178: "not having a previous Pap smear test was not significantly associated with cervical precancerous changes in our study." Did you have enough numbers to make this conclusion?

Line 196 "This higher prevalence of inflammatory changes in a population which has high literacy level and majority working women could be due to more liberal sexual behavior in this group." Specify which population you're referring to avoid ambiguity. Is there evidence that higher literacy levels lead to high risk sexual behavior? Please cite the evidence here.

7. Conclusion

231 'Yeast cell was the predominant microbial organism detected with most causes of inflammation remaining non-specific.' What does non-specific mean in this statement, undiagnosed?

8. References:

Use a uniform referencing style. E.g. line 181 has numbering while the rest are authors' names. Several references are mentioned in a sentence but not cited at the end of the sentence as should be. Check the referencing requirements for authors for BMC or any other journal that you chose to publish in.

National Guidelines for Prevention and Management of Cervical, Breast and Prostate Cancer (NGPMCBPC), 2012. Insert the authors/publishers of this reference e.g. Ministry of Health.
9. General

- The correct name of the study site (Family Health Options Kenya) should be used consistently. The acronym (FHOK) would be best given the long name rather than using different versions of the same name.

There are many grammatical errors that suggest that the manuscript was put together hurriedly. The authors should take time to revise the manuscript in order to improve readability. Examples are listed below (not exhaustive)

- Line 47: should read as 'scale up' not 'scaled up'

- 56: Delete "have been documented to…"

- 57-58: Grammar

- 69 Delete 'vastly'

- 86 Univariate analyses were "determined"

- 92 Delete 'an'

- 108 Use 'parous' instead of 'had given birth'

- 139 Delete: 'as their preferred mode of contraception'

- 164 Use the correct name for CDC

- 166 should read 30-39 years

- 171 change 'can' to 'may'

- 172 What is "invasence"?
- 190 replace "in the present study" with 'in this study"

- 216 "This can be attributed to the fact that all IUCD users had a history of a previous Pap tests and therefore might have been treated previously." This explanation is unlikely unless the participants were having pap smears within short intervals of each other (e.g. within months) or had one very recently

- 218 Use the correct term for "polymorphs"

- Scientific names should be in italics

- Some sentences could be shortened to communicate more clearly e.g. 211,

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

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I am able to assess the statistics

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