Reviewer’s report

Title: Female perspectives on male involvement in a human-papillomavirus-based cervical cancer-screening program in western Kenya

Version: 1 Date: 22 Apr 2019

Reviewer: Francis Obare

Reviewer's report:

The authors have addressed most of the comments of reviewers. There are, however, some more issues they need to consider to improve the paper further. These are outlined below.

A. BACKGROUND

1) First paragraph, fourth statement (page 3, line 82): Delete the commas before and after "LMICs".

2) Last paragraph:
   a) Third statement (page 4, line 119): The authors deleted "we" but it should be there for the statement to read well.
   b) Third statement (page 4, lines 121-122): Rephrase to read: "identify key themes to inform the development of a framework for understanding male involvement in cervical cancer prevention".
   c) Third statement (page 4, line 123): Replace the semi-colon after "prevention" with a comma.

B. METHODS

1) First paragraph:
   a) First statement (pages 4-5, lines 127-130): Rephrase to read: "We used data from … in Western Kenya to examine perceptions regarding male involvement in cervical cancer prevention."
   b) Last statement (page 5, line 134): Change "community health workers" to "community health volunteers" so that it is consistent with the abbreviated form.

2) Second paragraph:
   a) First statement (page 5, lines 136-137): The authors state that they conducted in-depth interviews with a representative sample of CHVs but they do not elaborate how the sample was drawn. Talking of a representative sample implies that they obtained a list of all CHVs and randomly sampled those they included in the study. If that was the case, we need to know what the sampling frame was and how many CHVs were sampled.
   b) Third and fourth statements (page 5, lines 139-143): There is still lack of clarity regarding the subsets of women included in the study, particularly the distinction between 206, 319 and 80. How are the numbers of women in the fourth statement (i.e. 319 and 80) different from that in the preceding statement (i.e. 206)? Does it mean that "interviews were sought from" 399 women (319 + 80) as stated...
in the fourth statement and only 206 interviews were completed as indicated in the preceding statement? For clarity, the authors should start by stating the total number of women who were targeted or included in the study before stating the sub-groups to which they belonged.

3) Third paragraph:
   a) First statement (page 5, line 146): Insert "the role of" between "and" and "male partners".
   b) Second statement (page 5, line 148): Change "community" to "communities".

4) Fourth paragraph:
   a) Second statement (page 5, lines 151-153): The authors should be sure that the qualitative interviews were conducted using tablets as stated.
   b) Last statement (page 6, lines 156-157): Insert "and" between "researchers" and "then".

5) Fifth paragraph, fifth statement (page 6, line 165): Change "design a framework" to "develop a framework".

6) Ethical approval (page 6, line 174): Change "boards at" to "boards of".

C. RESULTS

1) First paragraph:
   a) First and second statements (page 6, lines 179-181): If all in-depth interviews that were conducted during the parent study were included in the present analysis, what is the utility of the second statement? In other words, if all the interviews done during the parent study were used in the analysis for the paper, why should one expect differences in characteristics of participants such that it warrants mentioning that they did not differ?
   b) Fourth statement (pages 6-7, lines 183-187): Rephrase to read: "Whereas most women reported that the partner's permission … their own, CHVs indicated that despite receiving information …"
   c) Last statement (page 7, line 190): Delete "if they" from the statement.

2) Second paragraph (male partners as perceived barriers):
   a) First statement (page 7, lines 193-194): Rephrase to read: "Although most women considered their own partners as supportive, many were of the view that male partner opposition was a major barrier …"
   b) Fourth statement (page 7, line 199): Insert "the view" between "expressed" and "that"

3) Third paragraph (partner distrust):
   a) Third statement (page 7, lines 205-207): Rephrase to read: "Women who cited distrust as a barrier to care reported that …"
   b) Last statement (page 7, lines 207-210): The two parts of the statement are disconnected. The first part talks about women seeking services in secret while the second part purports to emphasize that women reported being unable to seek services or leave their homes. Seeking services secretly and inability to seek services at all are two different issues and should be argued out as such.
   c) Excerpt (page 8, line 212): Change "community sites" to "a community site".

4) Fourth paragraph (partner distrust):
   a) Second statement (page 8, line 218): Change "stigmatizations" to "stigmatization".
   b) Third statement (page 8, line 219): Insert a hyphen between "HIV" and "related".
   c) Excerpt (page 8, line 222): Delete "I" after "then".
5) Sixth paragraph (partner distrust), second statement (page 8, line 235): Change "symptomology" to "symptoms", and "than" to "who".

6) Eighth paragraph (unwillingness to adhere):
   a) First statement (page 9, line 252): Insert a hyphen between "post" and "treatment".
   b) Last statement (page 9, line 257): Change "in their behalf" to "on their behalf".

7) Eleventh paragraph (male partners as facilitators), second statement (page 10, line 280): Change "in contrast" to "contrary".

8) Twelfth paragraph (male partners as facilitators), page 10 (line 286): Change "One women" to "One woman".

9) Thirteenth paragraph (male partners as facilitators), excerpt (page 11, line 295): Change "There is" to "There was".

10) Fifteenth paragraph (proposed facilitators):
    a) Second statement (page 11, lines 303-304): Rephrase to read: "All participants suggested ways of increasing male …"
    b) Third statement (page 11, line 304): Change "surfaced" to "emerged".

11) Sixteenth paragraph (proposed facilitators), excerpt (page 11, lines 312-315): The excerpt is from a CHV, yet the preceding statement (lines 310-311) talks about what women said. A quote from a woman would be appropriate here since it is about the need for continuous education.

12) Seventeenth paragraph (proposed facilitators):
    a) First statement (page 11, line 316): Change "Most" to "Much".
    b) Last statement (page 11, line 321): Delete the statement as it is redundant since the message is already in the preceding statement.
    c) Excerpts (page 12, lines 322-328): The previous text is largely about the views of women while the first excerpt is from a CHV. Also, it is not clear what "Outreach and Education IDI" in the second excerpt stands for.

13) Nineteenth paragraph (page 12, lines 337-338): The statement is incomplete. Its meaning is therefore not clear.

14) Last paragraph:
    a) First statement (page 12, lines 342-344): Rephrase to read: "Although much of the conversation around male involvement revolved around partner involvement, participants reported that involvement of community leaders and village elders could be beneficial for spreading …"
    b) Second statement (page 12, line 346): Change "option" to "options".
    c) Last statement (page 13, lines 353-355): For clarity, the statement could be rephrased to something like, "However, future research could explore the acceptability, feasibility and effectiveness of using community leaders to provide cervical cancer information, especially to men."

15) Framework:
    a) There is still very limited discussion of how the findings informed the development of the framework or how the framework can help us understand male involvement in cervical cancer prevention programs. One would expect that after presenting the findings, the authors would then
discuss how those findings inform the development of the framework and how the framework helps us understand male involvement in cervical cancer prevention programs. In particular, what findings inform which components of the framework and how are the components related to each other? How does the relationship between the components help us understand male involvement in cervical cancer prevention programs? How can the components of the framework be operationalized so that a researcher who wants to apply it elsewhere will know exactly what kind of information to collect? These are questions the authors need to answer for their framework to make sense to readers.

b) Under drivers for facilitating actions (Figure 1), one driver is simply stated as "My life is important to him". Now, this is vague. In particular, how does one who wants to use the framework operationalize the phrase? The authors should come up with a concept that best summarizes the phrase, e.g. "importance men attach to women's lives".

c) Under facilitating actions (Figure 1), the phrase "permission to attend treatment hospital" is repeated twice. It is not clear whether it is under a different or the same group of drivers given the way the figure is presented. Also, couldn't the action be simplified to "permission to seek treatment" for clarity in all places it is used?

d) Under facilitating actions, third last bullet (Figure 1), change "suggestions" to "recommendations".

e) Under drivers of prohibiting actions (Figure 1), some of the aspects could be phrased better e.g. "Control of partner's movement" instead of "Does not allow partner to leave home"; "Lack of awareness about partner's care-seeking behaviour" instead of "Unaware that partner was treated"; and "Gender roles/cultural/community expectations" (note the forward slash between "cultural" and "community").

f) Change "attendance" to "attendance" in all places the word is used in the figure.

D. DISCUSSION

1) First paragraph, fifth statement (page 13, lines 367-368): Rephrase the second part to read: "also mentioned high levels of knowledge and awareness among their partners".

2) Second paragraph:
   a) First statement (page 13, line 371): Change the comma after "support" to a semi-colon.
   b) Third statement (page 13, lines 374-375): Change "plethora" to "number", and "motivations for" to "manifestations of".

3) Third paragraph:
   a) Second statement (page 14, lines 381-383): Rephrase to read: "This is consistent with studies which found that …"
   b) Fifth statement (page 14, lines 389-391): Rephrase to read: "Women's views regarding the relationship between men's lack of knowledge and their inability to provide support for cervical cancer screening or treatment indicate that … importance of partner education."

4) Fourth paragraph:
   a) First statement (page 14, lines 392-394): Rephrase to read: "Our findings show that lack of knowledge of cervical cancer prevention among male partners has potential negative influences on uptake of the services, particularly …"
   b) Second statement (page 14, lines 394-396): Rephrase to read: "This suggests a need for identifying strategies to effectively involve male partners in prevention programs."
c) Fifth statement (page 14, lines 399-401): Rephrase to read: "Our findings are consistent with WHO's recognition of men … as well as its recommendation …"

5) Fifth paragraph, first statement (page 14, lines 402-405): Rephrase to read: "Our findings regarding … education are also consistent with …"

6) Sixth paragraph:
   a) First and second statements (page 15, lines 409-412): Combine the two statements into one to read: "Importantly, the finding regarding male partners as a barrier to post-treatment care, especially prevention of complications or HPV re-infection through abstinence from sexual intercourse or condom use, highlights the need for culturally …"
   b) Third statement (page 15, lines 412-415): Change "post treatment care instructions" to "post-treatment recommendations".
   c) Last statement (page 15, lines 415-417): Rephrase the last part to read: "implications for future research, program and policy decisions…"

7) Seventh paragraph:
   a) First statement (page 15, lines 418-419): It is still not clear what "under-sampled population of women" actually refers to. Who are these people and what parameters did the authors use to determine that they are under-sampled? That is what a reader would like to know. Adding a citation alone does not improve clarity of the statement.
   b) Fourth statement (page 15, line 423): Insert a semi-colon between "participants" and "this".
   c) Sixth statement (page 15, line 428): Change "in this cluster-randomized study" to "in the parent study".
   d) Seventh statement (page 15, lines 428-429): Delete the statement as it is not informative and does not add value to the arguments.
   e) Last statement (page 15, lines 429-430): Rephrase to read: "The finding regarding women's emphasis on the importance of male involvement in cervical cancer prevention suggests a need for future studies to explore…"

8) Last paragraph, first statement (page 16, line 434): Delete "this" between "of" and "understanding".

E. CONCLUSIONS

Last statement (page 16, lines 447-450): Rephrase the second part to read: "…conversations around male involvement that go beyond vaccination of boys in order to realize the global goal of eliminating cervical cancer by the year 2030."

F. ABSTRACT

1) Background, third statement (page 2, line 51): Insert "vaginal swabs for" between "self-collected" and "human-papillomavirus".

2) Methods, second statement (page 2, line 57): The influence of "family" does not come out in the main text as alluded to here.

3) Results:
   a) First statement (page 2, line 58): This is not a result and should be deleted here. If the authors
conducted 605 in-depth interviews and 595 were included in the analysis, that should be mentioned in
the methods with an explanation of what happened to the 10 interviews that were excluded.
b) Second statement (page 2, lines 58-60): This statement should come as the last one in this
section for flow of argument. It should also be rephrased to something like, "Women reported a general
acceptance of involvement of community leaders in education and screening campaigns in a setting
where such leaders may hold influence over men in the community."
c) Fourth statement (page 2, line 64): Change "own partner" to "own partners".

G. DECLARATIONS

Author contributions (page 17, line 477): Change "provided manuscript feedback" to "reviewed the
manuscript for substantial intellectual content".

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.

Not relevant to this manuscript

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