

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form ([see an example](#)) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Does antiretroviral therapy initiation increase sexual risk taking in Kenyan female sex workers: a retrospective, case-control study
AUTHORS	Elysha Mawji, Lyle R. McKinnon, Charles Wachihi, Duncan Chege, Paul Thottingal, Anthony Kariri, Francis A. Plummer, T. Blake Ball, Walter Jaoko, Elizabeth N. Ngugi, Joshua Kimani, Lawrence Gelmon, Nico Nagelkerke and Rupert Kaul

VERSION 1 - REVIEW

REVIEWER	Amanda Roxburgh Senior Researcher National Drug and Alcohol Research Centre University of New South Wales Australia I have no competing interests to declare.
REVIEW RETURNED	22/11/2011

THE STUDY	I think it;d be useful if the authors specified each of the statistical techniques used in their analyses rather than a conglomerate of non-parametric statistics.
GENERAL COMMENTS	<p>Antiretroviral therapy initiation in Kenyan female sex workers is not associated with increased sexual risk taking – comments to authors</p> <p>This is a really interesting paper with some good findings. There are however, several ways in which this paper could be improved and it would require revision. I will address my comments by sections of the paper.</p> <p>First paragraph</p> <p>Line 6 page 7 - a minor comment but I think the first sentence would be more accurate if it read “ ART provision appears to have <i>contradictory</i> effects on HIV transmission.”</p> <p>Line 10 page 7 – could the authors please expand for readers on the mechanism in which ART has been found to be associated with reduced safe sex practices. Is it that people feel protected while on ART and therefore take more sex risks? It would just help the reader without them having to read the broader literature on this issue.</p> <p>Line 13 page 7 – why has it not been the case to date in resource-poor countries?</p> <p>Line 15 page 1 –can the authors please expand a little for the reader on what sort of modelling was done and what it found.</p> <p>Line 30 page 7 - I'd suggest moving this paragraph up in front of the first paragraph so the introduction starts with FSW and HIV, and then moves into ART and sex risk. It would be a more logical flow.</p> <p>Line 34 page 7 – a suggestion to rephrase the “. . . and an inability to negotiate safer sex practices” sentence to “ and in many instances their ability to negotiate safer sex practices are</p>

	<p>compromised.”</p> <p>As it is written it makes it sound like it’s their responsibility to negotiate safe sex practices, but in reality there will be a lot of circumstances in which, due to no fault of their own, these negotiations are compromised.</p> <p>Line 48 page 7 - Would suggest commencing the paragraph with “In the current study, we assessed the impact of ART . . . ” to delineate the introduction and the background research from the current study.</p> <p>Line 15 page 8 - Could the authors describe each of the statistical techniques used to assess each of the outcome variables.</p> <p>Line 22 page 8 - It would help if the authors could include a sub-heading Results here so that the reader knows they are now reading the findings of the study.</p> <p>In general I found this part of the paper difficult to understand as there were some figures in the text that didn’t appear to be in Table format. What might make it easier is to break the findings into Differences between cases and controls on the selected outcome variables and Differences over time on selected outcome variables. Perhaps there could be separate tables for these findings also.</p> <p>As it is set out it is very difficult to understand.</p> <p>Line 13 page 9 – the authors refer to the semi-quantitative measure but I’m unsure what measure they are referring to.</p> <p>Line 27 page 9 – Could the authors please spell out TV and NG.</p> <p>Table 1 – I was unsure what variables are what. For instance is it the mean number of regular clients per day reported? Could the authors please elaborate on whether variables are % or whether they are means for the reader. As per my comment earlier it would also be helpful if the findings were separated into a Table for differences across cases and controls and a table for differences over time. This way all of the findings that appear in text can also appear in table format making it easier for the reader.</p> <p>One final general comment, while the authors found no increase in risk taking, it’s interesting that there are seemingly high base levels of risk taking occurring in this group. The fact that condoms were rarely used with regular clients is clearly risky behaviour and possibly warrants mention in the discussion, for the risks this poses and the need to educate these women about these risks. These findings should also be included in table format.</p>
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REVIEWER	<p>Caitlin Kennedy Assistant Professor Johns Hopkins Bloomberg School of Public Health USA</p> <p>I have no competing interests to report.</p>
REVIEW RETURNED	11/02/2012

THE STUDY	<p>Main outcome measure: I’m not sure exactly how the condom use outcome was calculated – did you simply divide the number of condoms reported used per week (with clients?) by the number of clients reported per week?</p> <p>Statistical methods: You say “non-parametric tests” were used – which ones? Did they account for some presumably low cell counts, given the relatively small sample size? Did they consider dependency in the longitudinal data? Later in the manuscript you mention Wilcoxon test once but it’s unclear what was used for other comparisons, so I can’t fully assess the quality of the statistics</p>
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	without further information.
GENERAL COMMENTS	<p>Overall this was a very nicely written manuscript on an important issue, and I recommend publication after the minor issues above are addressed. A few additional comments and suggestions:</p> <p>Article summary and abstract:</p> <p>Words such as “an important potential source of onward HIV transmission” and “core transmission group” are potentially stigmatizing, as they focus on sex workers as vectors of transmission rather than also acknowledging that they are at heightened vulnerability to HIV infection from their clients and partners. Suggest rephrasing.</p> <p>Main text</p> <p>Page 7, “dichotomous effects” does not seem to be the right word – I think you want to say “potentially contradictory effects” or “opposing effects”.</p> <p>Page 7, Line 10: Suggest rephrasing to “increases in STI incidence in some settings (5). Although behavioral disinhibition has not...”</p> <p>Page 8, Line 29: So controls were combining HIV-positive and HIV-negative FSWs? This seems problematic as rates of condom use at baseline, for example, would likely differ based on HIV serostatus. I suggest always presenting comparisons of both control group separately.</p> <p>Page 9, line 25: Suggest rephrasing to “could be associated with”</p> <p>Page 9, line 27: Spell all acronyms (eg. TV, NG) the first time they are used (double-check throughout manuscript).</p>

VERSION 1 – AUTHOR RESPONSE

Reviewer: Amanda Roxburgh
Senior Researcher
National Drug and Alcohol Research Centre
University of New South Wales
Australia

I have no competing interests to declare.

I think it'd be useful if the authors specified each of the statistical techniques used in their analyses rather than a conglomerate of non-parametric statistics.

- We used Mann Whitney tests to compare continuous variables, and Wilcoxon tests for paired longitudinal comparisons. We have now updated this in the manuscript's section on statistics.

This is a really interesting paper with some good findings. There are however, several ways in which this paper could be improved and it would require revision. I will address my comments by sections of the paper.

First paragraph

Line 6 page 7 - a minor comment but I think the first sentence would be more accurate if it read “ ART provision appears to have contradictory effects on HIV transmission.”

- We have made this change.

Line 10 page 7 – could the authors please expand for readers on the mechanism in which ART has been found to be associated with reduced safe sex practices. Is it that people feel protected while on ART and therefore take more sex risks? It would just help the reader without them having to read the broader literature on this issue.

- We have added a sentence on this, though the details may not be similar in all cases.

Line 13 page 7 – why has it not been the case to date in resource-poor countries?

- We don't believe that this is well known, as there have been very few studies. We have noted in the revised manuscript the need for further studies to back up these initial observations.

Line 15 page 1 –can the authors please expand a little for the reader on what sort of modeling was done and what it found.

- The specific details of the model can be found in Ref. 8. In brief, this was a mathematical model based on known rates of transmission to examine how reductions in HIV viral load would impact on transmission via various routes. The result was that transmission can still occur, though at reduced rates, if people continue having unprotected sex.

Line 30 page 7 - I'd suggest moving this paragraph up in front of the first paragraph so the introduction starts with FSW and HIV, and then moves into ART and sex risk. It would be a more logical flow.

- We have made this change.

Line 34 page 7 – a suggestion to rephrase the “. . . and an inability to negotiate safer sex practices” sentence to “and in many instances their ability to negotiate safer sex practices are compromised.”

As it is written it makes it sound like it's their responsibility to negotiate safe sex practices, but in reality there will be a lot of circumstances in which, due to no fault of their own, these negotiations are compromised.

- We have made this change.

Line 48 page 7 - Would suggest commencing the paragraph with “In the current study, we assessed the impact of ART . . . “ to delineate the introduction and the background research from the current study.

- We have made this change.

Line 15 page 8 - Could the authors describe each of the statistical techniques used to assess each of the outcome variables.

- Please see the comment above about statistical tests used in the manuscript.

Line 22 page 8 - It would help if the authors could include a sub-heading Results here so that the reader knows they are now reading the findings of the study.

- We have made this change.

In general I found this part of the paper difficult to understand as there were some figures in the text that didn't appear to be in Table format. What might make it easier is to break the findings into Differences between cases and controls on the selected outcome variables and Differences over time on selected outcome variables. Perhaps there could be separate tables for these findings also. As it is set out it is very difficult to understand.

- We appreciate this comment, and have now divided the data into two tables, separating baseline characteristics with changes in behaviour over time.

Line 13 page 9 – the authors refer to the semi-quantitative measure but I'm unsure what measure they are referring to.

- We have removed this, since condom use measures are described elsewhere in the manuscript.

Line 27 page 9 – Could the authors please spell out TV and NG.

- We have made this change.

Table 1 – I was unsure what variables are what. For instance is it the mean number of regular clients per day reported? Could the authors please elaborate on whether variables are % or whether they are means for the reader. As per my comment earlier it would also be helpful if the findings were separated into a Table for differences across cases and controls and a table for differences over time. This way all of the findings that appear in text can also appear in table format making it easier for the reader.

- We thank the reviewer for the comment. For number of clients we have shown the mean values. The only % values are for STIs and are indicated. As mentioned above, we have now split the data into baseline comparison between groups (Table 1) and longitudinal comparison (Table 2).

One final general comment, while the authors found no increase in risk taking, it's interesting that there are seemingly high base levels of risk taking occurring in this group. The fact that condoms were rarely used with regular clients is clearly risky behaviour and possibly warrants mention in the discussion, for the risks this poses and the need to educate these women about these risks. These findings should also be included in table format.

- We have now mentioned the low condom use in regular partners in the discussion. While we agree this is a risky behaviour, increasing condom use in regular partners of FSW has been a major challenge in a number of contexts, so we do not think this data is any different from what has previously been published on the topic.

Reviewer: Caitlin Kennedy
Assistant Professor
Johns Hopkins Bloomberg School of Public Health
USA

I have no competing interests to report.

Main outcome measure: I'm not sure exactly how the condom use outcome was calculated – did you simply divide the number of condoms reported used per week (with clients?) by the number of clients reported per week?

- Condom use was self-reported. Number of "exposures" per year was calculated using client volumes per week and the condom use that was reported with those clients.

Statistical methods: You say "non-parametric tests" were used – which ones? Did they account for some presumably low cell counts, given the relatively small sample size? Did they consider dependency in the longitudinal data? Later in the manuscript you mention Wilcoxon test once but it's unclear what was used for other comparisons, so I can't fully assess the quality of the statistics without further information.

- As stated above, we have added more details on statistics used in the paragraph about Methods.

Overall this was a very nicely written manuscript on an important issue, and I recommend publication after the minor issues above are addressed. A few additional comments and suggestions:

Article summary and abstract:

Words such as “an important potential source of onward HIV transmission” and “core transmission group” are potentially stigmatizing, as they focus on sex workers as vectors of transmission rather than also acknowledging that they are at heightened vulnerability to HIV infection from their clients and partners. Suggest rephrasing.

- We have modified this wording. Although we agree with the reviewer this can be stigmatizing, it is still an important reality with public health implications, and is one of the reasons sexual risk taking is an important thing to study in this population.

Main text

Page 7, “dichotomous effects” does not seem to be the right word – I think you want to say “potentially contradictory effects” or “opposing effects”.

- We have changed the wording of this sentence.

Page 7, Line 10: Suggest rephrasing to “increases in STI incidence in some settings (5). Although behavioral disinhibition has not...”

- We have made this change.

Page 8, Line 29: So controls were combining HIV-positive and HIV-negative FSWs? This seems problematic as rates of condom use at baseline, for example, would likely differ based on HIV serostatus. I suggest always presenting comparisons of both control group separately.

- We have added a new table (Table 1) that shows the breakdown of key variables between groups, so the reader has a better idea on why the control groups were combined.

Page 9, line 25: Suggest rephrasing to “could be associated with”

- We have made this change.

Page 9, line 27: Spell all acronyms (eg. TV, NG) the first time they are used (double-check throughout manuscript).

- We have made this change.

VERSION 2 – REVIEW

REVIEWER	Amanda Roxburgh Senior Research Officer National Drug and Alcohol Research Centre University of New South Wales Sydney, Australia
REVIEW RETURNED	05/03/2012

RESULTS & CONCLUSIONS	The authors in their response to reviewer comments noted that they have pointed out in the manuscript that condom use was infrequent with regular clients. They also noted in this response that this is consistent with previous research. This could perhaps be included in the actual manuscript - they are right - this is a consistent finding and a good one to point out with refs to other studies that have found this.
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