Author’s response to reviews

Title: Feasibility of Community Based HIV Self-Screening in South Africa: A Demonstration Project

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An interesting paper that provides novel information on HIVSS feasibility and acceptability among different populations that are not so commonly captured in other studies (men and female sex workers). Also, provides information on recruitment strategies to reach these populations. The paper could be revised to clarify language and grammatical errors. Not sure the information on HIV self-test kit sensitivity and specificity is adding much to this paper, as the kit has already demonstrated to be accurate in many other studies and South Africa would not have released the kit to the public if it wasn't accurate.

Thank you for this comment, results on sensitivity and specificity have been removed.

The overall manuscript has also been reviewed to improve clarity.

ABSTRACT:
* (Introduction, Line 9): HIV testing can also be helpful for linking those that are HIV-negative to HIV prevention services. Thank you for this comment, the sentence has been updated according to your recommendations.

* (Methods): When did follow-up occur? E.g., 1 month after? Thank you for this comment, the sentence has been revised for clarity.

* (Results, Line 24): Extra space after "approached" Thank you for this comment, extra space has been deleted.

* (Results, Line 25): I am confused by "15 were excluded due to missing data" - suggest dropping and leaving for the methods. Thank you for this comment, the phrase 15 were excluded due to missing data has been removed and sentence revised for clarity.

* (Results, Lines 28-30): Does interested in HIVSS mean that they took an HIVST? Thank you for this comment, the sentence has been revised for clarity.

* * (Results, Lines 31-33): You don't discuss in your methods section how you measure sensitivity and specify. You also don't mention what type of HIVST you used in this study. Please add this if you are going to present sensitivity and specificity results. Thank you for this comment, the results on sensitivity and specificity have been removed.

* (Conclusion, Lines 34-35): In your results, you present the % of participants that preferred HIVSS, but not the % that utilized HIVSS. If these are the same, only need to mention one. Thank you for this comment, the results section has been updated to include the number of people that used the test.

* (Conclusion, Lines 35-36): In the results, you only present the % of HIV positives that initiated ART, you don't discuss the % that tested unsupervised that got confirmatory testing. I would mention this if you are going to add this as final conclusion. Thank you for this comment, results section has been updated to include the numbers that were linked to a primary HIV test.
INTRODUCTION:

* (Lines 70-72): Isn't oral HIVST already available in South Africa? Thus case, is the government still investigating implementation of HIVSS if they have already implemented it? Thank you for this comment, oral HIVST is available through private pharmacies and NGOs, and not department of health facilities or testing programs.

Minor:

* (Line 49): Add "s" to population = "populations" Thank you for this comment, sentence has been revised according to your recommendation.

Line 370

* (Line 49): Add "In" before the = "In the newly-released…" Thank you for this comment, sentence has been revised according to your recommendation.

Line 370

* (Line 59): "…HIV infections with 7.1 million…” - consider changing with to and. Thank you for this comment, sentence has been revised according to your recommendation

Line 379

* (Line 61): Define "HCT" Thank you for this comment, sentence has been revised according to your recommendation

Line 381

* (Lines 76-78): This sentence has a misspelling and discusses uptake twice - redundant. Thank you for this comment, sentence has been revised for clarity.

* (Line 80): Want to clarify that these follow-up actions are for those to test HIV positive? Thank you for this comment, the follow-ups were done for participants that tested HIV positive and negative. The sentence has been revised for clarity.
* (Lines 81-83): The information about sensitivity and specificity sound like methods, suggest re-framing so it sounds like a paper aim. Thank you for this comment, the sentence has been deleted as the sensitivity and specificity results have been removed.

* (Line 84): Want to clarify linkage to care following self-screening? Thank you for this comment, sentence has been revised for clarity.

METHODS:

* (Recruitment): It would be helpful to know some more details on each of these recruitment methods - e.g., how many mobile HIV testing sites did you set up and for how many dates was each set up? How many homes did you visit? How many work places did you visit? How many sex-worker locations did you visit? Thank you for this comment, more details have been added to the recruitment strategies.

Lines 706-720

* (Lines 172-175): "Terminated" seems like a strange word to use here. Consider word choice. Thank you for this comment, sentence has been revised for clarity.

Line 1088

* (Data collection): Need more information here. What was the timing of the pre, follow-up, and post interviews? Were all quantitative? What types of information did you collect in these interviews (e.g., demographics, sexual behaviours, HIV testing preferences, etc)? Was the information from the paper questionnaires transferred to REDCap? How soon after? Thank you for this comment, the section has been expanded according to your recommendations.

Line 1293-1305

* (Data Analysis): How did you determine the proportion of HIV-positive test results from those that used OraQuick? Self-report at follow-up? If so, at what time (e.g., 1 week following testing?). Or was this just for people in the supervised/semi-supervised group for whom you had results? Please clarify. Thank you for this comment, the analysis section has been updated for clarity.
Lines 1313 - 1315

Minor:

* (Line 91): These estimates are very precise, what year? Suggest rounding the numbers so they appear more like estimate. Thank you for this comment, sentence has been revised for coherence.

Line 542

* (Line 130): What local languages? Thank you for this comment, sentence has been revised to include the languages used.

Line 1303

RESULTS:

* (Line 197): What does "approached for HIV testing" mean? Does this mean that they came to the events or were at home when you went to their door? Please define. Thank you for this comment, approached through the four recruitment strategies and given information about HIV self-screening.

1410-1412

* (Line 201): Does "interested in HIV self-screening" = selected to self-screen? Thank you for this comment, yes, interested means opted for HIV self-screen. The sentence has been revised for clarity.

Line 1415

* (Self-screening, Lines 244-247): Consider excluding those lost to follow-up from this calculation - mention this separately. Thank you for this comment, we do not have data on kit usage for the participants that were unreachable on follow-up.

* (Lines 267-268): What were the other locations where people previously tested? Thank you for this comment, the section has been expanded to include requested information.
Line 1841 - 1843

* (Lines 278-279): Suggest presenting initiation on ART before CD4 testing. Thank you for this comment, sentence has been revised according to your recommendation.

Line 1851

* (Linkage section): Did you measure linkage to any HIV prevention services (e.g., PrEP for FSWs)? Thank you for this comment, we did not measure linkages to PrEP.
* (Line 281): You are measuring sensitivity of the kit, not the screening approach (community-based HIVSS). Thank you for this comment, the sentence has been deleted as the sensitivity and specificity results have been removed.
* (Sensitivity and Specificity): These kits have already been proven in numerous studies to have high sensitivity and specificity when compared to blood-based tests, which is why they are available on the market in South Africa, not sure what this information is adding to the paper. Thank you for this comment, the sensitivity and specificity results have been removed.

Minor:

* (Line 262): What is your definition of an invalid HIV test result? Thank you for this comment, invalid results was defined as no stripe. The sentence has been updated.

Line 1837

* (line 270): Need "of the" before "participants" Thank you for this comment, the sentence has been revised.

Line 1844

* (Line 273): "and one (3.6%) person not wanting to respond to the interviewer" - this is confusing and unclear what this means. Suggest dropping. Thank you for this comment, the sentence has been edited according to your recommendations.

DISCUSSION:

* (Lines 312-314): "The update of HIV self-screening was due to individuals wanting to know their status and being influenced by friends, partners, and family members" - how do you know this? This wasn't presented in the results section. Thank you for this comment, the sentence has been revised as suggested to exclude information not included in the results section.
* (Lines 327-329): Did you as participants that had not linked to care at follow-up why they did not link to care in this study? Thank you for this comment, the section has been revised for clarity.

* (Lines 344-345): I thought they had the option to do the rapid HIV finger-prick test? This is making it sound like it was mandatory. Thank you for this comment, HIV rapid test is the only recommended diagnostic test in South Africa and those that used HIV self-screening kit had to get a rapid HIV test to confirm their results.

* (Lines 350-351): What were the follow-up rates for this study? Make sure this is clear at the beginning of the results section. Thank you for this comment, the follow-up rates have been included in the section of HIV self-screening results.

FIGURES & TABLES:

* Figure 2: "HIV test results available" - what does this mean? Does this mean they conducted an HIV-rapid test? Or does it include self-reported HIV test results for those who did unsupervised testing? Thank you for this comment, Figure 2 has been updated for clarity. HIV self-screen results available: Observed HIV screening results for supervised and semi-supervised and self-report of HIV self-screening results for participants that opted for unsupervised HIV self-screening.

Reviewer 2

The manuscript is meant to focus on Feasibility of HIVSS. However, the introduction still lacks some flow. The manuscript needs to be better aligned with feasibility rather than acceptability. Alternatively, the manuscript title and objective should be changed to acceptability and feasibility.

Thank you for this comment, the manuscript has been revised extensively to keep the focus on feasibility of HIV self-screening.

Thank you for reviewing the manuscript.

Yours Sincerely
Limakatso Lebina and the co-authors.