

Rebuttal Letter

HIV self-testing positivity rate and linkage to confirmatory testing and care: a telephone survey in Côte d'Ivoire, Mali, and Senegal

We sincerely thank you for your time and effort in reviewing our manuscript.

Your insightful comments will help refine and improve our work.

We have carefully examined all the points raised and have made revisions accordingly. Please find point-by-point responses to your comments below.

RECOMMENDER'S DECISION

Summary

I am pleased to be able to provide the authors with feedback on this important study which details how HIV self-testing can help to better reach targeted populations, and which also provides the details of a non-invasive method to help determine the results of that testing. This work is important not just for managing a public health issue, but for tracking the epidemiology of this disease which carries so much stigma and can evade traditional testing methods. While there are some major issues that need to be addressed (see below), I strongly believe these issues are addressable, that the data support the conclusions, and that this article deserves recommendation. I look forward to seeing their revised manuscript.

Comments

In addition to the three reviewer comments, you will find attached to this decision, I have made some observations myself that need to be addressed. The two main "major" issues I have are as follow:

Major Issue 1: Article structure and scholarship

The article needs to be structured in proper format – with methods in the methods section, results in the results section, and discussion in the discussion. References need to be complete, and the authors should give it more careful review for typos before resubmitting. I would also like to see a bit more scholarship, with previous self-testing methods and studies cited – and those cited explained a bit more. Specific comments to help with this are found below, but also among the other reviewer's comments.

Thank you for your detailed feedback. We appreciate your guidance and have ensured that the article adheres to the appropriate format. In particular, the description of the ATLAS programme has been moved to the Methods section. We have reviewed and corrected typographical errors and filled in the missing references.

Major Issue 2:

Statistical methods are not clearly stated (i.e., line 201 “explored” how?), and results could use a figure.

We have made the necessary modifications to the methodology and illustrated specific results with a figure when required. These modifications are detailed in our responses to your specific comments below. The different R packages used for the analysis have been precised in the Methods section.

If I understand correctly, the respondent’s answers to the two phases were linkable despite being anonymous. Thus, it seems Table S1, for instance, should have been done using a repeated measures ANOVA, since results from phase 1 and phase 2 were not independent? I could be wrong about this, but the authors should be more explicit and justify the statistical tests used. It’s not clear what the Chi-sq tests are really testing here.

The data in Table S1 represent characteristics collected during the first phase of the survey. It has been made more explicit in the title of the table.

We generated a specific variable that classifies participants based on their eligibility and whether or not they participated in phase 2 : one group completed phase 2 while the two others did not complete phase 2 questionnaires. *This variable was then cross-tabulated with other variables collected in phase 1 questionnaire.*

As we compare mutually exclusive groups, the chi-squared test remains the appropriate test.

I also agree that clear presentation of analysis related to age groups is needed.

We have added Table S3 presenting the positivity rates by age group and country, based on our different hypotheses. Additionally, a new paragraph has been incorporated into the 'HIVST positivity rate' subsection of the 'Results' section:

“When analyzing positivity rates by age group (Table S3), for those under 24 years old, the rates ranged from 2.2% to 7.4% based on the reported self-interpreted result and from 3.1% to 5.9% based on the reported number of lines. Among those aged 25 to 34 years old, it fluctuated between 2.7% and 9.5% based on the reported self-interpreted result and from 4.9% to 7.8% based on the reported number of lines. Lastly, for individuals 35 years old or older, the rate lied between 1.8% and 12% based on the reported self-interpreted result and between 4.9% and 9.3% based on the reported number of lines”

I also agree with reviewers that a figure showing results would be useful. Figures, such as bar charts with bars for standard error of proportion or tukey test results would help the reader understand also what tests were used and how the results grouped (or didn't).

We would like to thank the reviewers for this recommendation which undeniably enriches our presentation and enhances the comprehension of our results.

We incorporated in the manuscript a new figure (Figure 3) presenting the different positivity rates by hypothesis, country and sub-population. We also added, as suggested, confidence intervals (using `binom.test()` function, as now stated in the Methods).

To ensure the clarity and relevance of our graph, we decided to exclude positivity rates from categories with fewer than 25 participants. They display very wide confidence intervals that could compromise readability and interpretability.

The table with detailed results has been moved to the appendix (table S2).

As Reviewer 1 mentions describing the use of R, the convention is that the functions and packages used for each statistical test (aside from basic summary statistics) should be explicitly written in the methods.

We have improved the sentence as follows: “All analyses have been performed using R version 4.3.1 [39]. All the descriptive tables were generated using the tbl_summary() function from the gtsummary package [40].”

Specific comments:

Lines 30-42: Parroting one reviewer’s comment, I think this part of the methods can be less detailed in the abstract, to be more succinctly presented.

We have reworded the paragraph as follows to make it more succinct: “To preserve the confidential nature of HIVST, use of kits and their results were not systematically tracked. Instead, an anonymous phone survey was carried out in two phases during 2021 to estimate HIVST positivity rates (phase 1) and linkage to confirmatory testing (phase 2). Initially, participants were recruited via leaflets from March to June and completed a sociobehavioural questionnaire. In the second phase (September to October), those with a reactive HIVST result were re-contacted for another questionnaire. Of the 2 615 initial participants, 89.7% reported consistent results between their interpretation and the number of lines on the HIVST (i.e., 1 for negative, 2 for reactive). The HIVST positivity rates ranged between 2.4% and 9.1% depending on calculations.”

Line 65-66: explain what is 95-95-95 targets.

We explained the 95-95-95 objective by adding the following sentence: “The 95-95-95 targets aim for 95% of people living with HIV to know their status, 95% of those diagnosed to receive treatment, and 95% of those on treatment to achieve viral suppression. Improving diagnosis coverage, especially among vulnerable key populations at high risk of HIV acquisition and transmission, is the necessary first step to achieve this goal.”

Seems like the Rouveau et al 2021 paper (ref 23) should be introduced in line 77. Perhaps also ref 41 (Ki-Zerbo et al).

Thank you for that observation. We have included this reference where requested.

« The ATLAS programme (AutoTest de dépistage du VIH : Libre d'Accéder à la connaissance de son Statut) aimed to promote, implement, and expand HIV self-testing in Côte d'Ivoire, Mali, and Senegal [29] »

Please review reference formats, including in-line reference norms, as well as links and accession dates for online materials, such as those published by WHO.

We have reviewed all the references and added the links to the WHO documents, as requested.

Lines 81-119 should be part of the methods: study design, etc.

Thank you for your advice. For clarity, we have moved the entire description of the ATLAS program to form a new subsection within the methodology section.

Lines 130-135 should be part of the discussion.

Thank you for the comment. We moved this paragraph to the penultimate position in the discussion section.

Line 178: The data management plan, if approved in French by the appropriate authorities, does not need to be translated, but I agree that it should be stated that it is to be found in French.

We have added the following to the paragraph to explain that the data management plan was written in French:

“The full research protocol was written in French (https://hal.science/ATLAS_ADVIH/hal-04121482v1). A protocol paper in English has been published elsewhere [29].”

Lines 187-190: These two sentences can be combined by simply putting the extra information contained in the second parenthetically into the first. i.e. the low hypothesis considered DK-R as non-reactive (one line), ...

This sentence has been rewritten as suggested:

“Using self-reported results (respectively the reported number of visible lines), the low hypothesis considered DK-R as non-reactive (as one line), and the high hypothesis as reactive (as two lines), while DK-R were excluded from both the numerator and the denominator in the central hypothesis.”

Line 203: the type of facility “where” (not “was”) confirmatory testing was performed

Thank you for your comment. We have corrected the error.

Lines 295-297: I think here, the authors should state the fact of suboptimal linkage/care without the negative “however”. Instead, I would write it as a positive “however” on the second sentence:

“Linkage to years of implementation. However, among participants who...”

Thank you for the suggestion. We have changed the text accordingly. It is important to note that, following the reorganisation of the discussion, it does not appear anymore at the beginning of the discussion but rather at the end.

“ATLAS’ HIVST distribution strategy successfully reached people living with HIV in West Africa, although linkage to confirmatory testing remained sub-optimal in these first years of HIVST implementation. However, among participants who confirmed their reactive self-test result with a traditional facility-based HIV test, a substantial proportion quickly proceeded with this confirmation (more than half in less than a week and the vast majority in less than three months).”

Line 332: “assumption” => “estimate” (It’s an estimate, based on conservative assumptions)

Thank you for your comment. It has been corrected accordingly.

Lines 331-343: Here, please clarify that the results reported are from the referenced study and provide more information on that study. How are these lower estimates usually gathered?

We have incorporated the necessary details regarding this study and our estimates for comparison. The paragraph now stands as:

“In 2021, a study based on the UNAIDS-supported Shiny90 mathematical model [43] estimated, using data from 184 population surveys and reports from national HIV screening programs from 40 sub-Saharan African countries, that the positivity rates for conventional HIV testing were 1.4% in Côte d'Ivoire, 2.2% in Mali, and 1.0% in Senegal. These rates were lower than our estimates for HIVST, even when using our lower (conservative) estimate. These rates are also in lines with those collected by ATLAS implementing partners. Between 2020 and 2021, these ATLAS partners collected spontaneous feedback from HIVST users!”

Line 349: closer (not close – close would require reporting the confidence intervals for both figures)

Thank you for pointing that out. It has been corrected accordingly.

Table S2: “I didn’t know WE should get...” not “I didn’t know HE should get...” ?

Thank you for your comment. It has been corrected accordingly.

Table S5: organise the table from shortest time to longest time, rather than alphabetically.

In Table S5, the times are already arranged from shortest to longest time between HIVST and confirmation. We hope we understood your comment correctly.

The discussion needs reorganisation. Here are my suggestions, which echo those made by other reviewers:

I would move paragraphs 322-343 up as the first paragraph of the discussion. I would also re-organise, as the second paragraph repeats the assertion while adding more data from other studies. For instance, move lines 337-341 up together with the other conventional estimates listed above. Then finish with lines 324-330 and finally the sentence 341-343.

I would move the paragraph Lines 306-321 to just before the paragraph beginning on line 344 (so, discuss positivity, then interpretation, then confirmatory testing linkage).

Lines 301-305: This should come closer to the end of the discussion, and maybe a bit more detail about the cost should be included. For instance, the fact that phase 2 respondents were not aware of the reward could mean that the cost could potentially be reduced by excluding this reward. I think the authors would do well to say that the alternative methods (explained more: what are the “modeling” methods??) should be compared, including phone surveys without financial incentives.

Lines 294-300 should then be moved to the very end, as a conclusion, to be married with the text currently in the paragraph starting with line 365.

Thank you for your constructive feedback and detailed suggestions regarding re-organising the "Discussion" section. We have considered most of your recommendations, which have helped us enhance the clarity and coherence of the text.

In the first paragraph of the "Discussion", we supplemented the summary with quantified data. The paragraphs have been rearranged in accordance with your suggestions. As for the paragraph found on lines 301-305, we added a reference to clarify the modelling method used. Lastly, the conclusion was bolstered by incorporating elements from the first paragraph.

REVIEWER 1

Summary

This study conducted in Côte d'Ivoire, Mali, and Senegal aimed to assess the positivity rate of HIV self-testing and its linkage to confirmatory testing and subsequent care. The research employed a telephone survey methodology to collect data from individuals who had utilised HIV self-testing kits. The study found that HIV self-testing played a significant role in increasing testing rates and identifying new HIV cases in all three countries. The positivity rate among individuals who self-tested for HIV was found to be considerable, indicating the importance of this approach as a screening tool. The manuscript is well written, has important message. However, I have several significant concerns about the materials/methods and result sections that should be addressed prior to publication.

Thank you for your positive feedback.

Comments

Materials and Methods

Line171 /Sources data: The author wrote “Compensation of XOF 2 000 (≈3.40 USD) in the form of telephone credit was given to participants who completed the phase 2 questionnaire.” The author didn’t mention the number of participants in phase 2.

We have included the number of participants in phase 2 by revising the text as follows:

“Those who reported two lines or a reactive result (n=126) were asked for their consent to be called back few months later to participate in a complementary survey and, if consented and provided a phone contact (n=120). As some individuals may delay their decision to undergo a confirmatory test by several weeks/months after using an HIV self-test, we chose a minimum of 3-month gap between our two surveys to potentially get an estimate of the maximum number of participants who eventually underwent confirmatory testing From September 27th to October 22nd, 2021, 96 were successfully recontacted and invited to complete a 5-minute questionnaire (phase 2) on linkage to confirmatory testing and care. Among those, 89 accepted to participate in phase 2 and 78 fully completed phase 2 questionnaire.”

Line 204/Data analysis: The author wrote “All analyses have been performed using R version 4.2.2 [31]. A dedicated anonymised dataset and the corresponding R script are available on Zenodo (<https://doi.org/10.5281/zenodo.7986077>) to allow replication of the analysis.” This paragraph belongs to statistical analysis section. There is insufficient information provided in the statistical section, particularly in relation to the use of R. The statistical methods employed in your study need to be clearly explained, with a focus on how R facilitated these analyses. Be sure to elaborate on the statistical tests, models, or algorithms utilised, along with the corresponding R code or packages used to implement them. This information is crucial for readers who wish to replicate or build upon your work.

We have strengthened the sentence as follows:

“All analyses have been performed using R version 4.3.1 [38]. All the descriptive tables were generated using the `tbl_summary()` function from the `gtsummary` package [39].”

Results

Line 231/ HIVST positivity rates: the author wrote” By excluding DK-R from the numerator and the denominator (central hypothesis), the positivity rate increased to 2.5%. Considering DK-R as reactive (high hypothesis) increased the positivity rate to 9.1%. Estimates based on the reported number of visible lines on the HIVST were 4.4%, 4.5% and 7.2%, ...”. Showing many numbers in tables make it difficult to interpret the results. Presenting the data in diagrams (for example bar diagrams) will definitely help to have an overview of the results.

We have moved Table 2 to the appendix (now table S2) and created a graph to facilitate the understanding of our results (cf. figure 3).

Figure: Line 95/ Figure 1: You used a very low-resolution image. Figures must be uploaded as a high-resolution file.

Low resolution was due to a problem with the PDF generation process on medRxiv. For the resubmission, we tried directly to upload a PDF to keep a good resolution for all figures.

REVIEWER 2

Summary

This is an interesting paper showing the results from a 2-phase anonymous telephone survey aiming to address the positivity rates and linkage to confirmatory testing of participants of the ATLAS programme, in Côte d’Ivoire, Mali and Senegal. Positivity rates depending on the different ways that participants may interpret the results from the HIVST kit, as well as the proportion of participants engaging in confirmatory testing are shown and discussed. The code for reproducing the results is available in a public repository. Below, I write some comments (mostly minor) that might help improving the manuscript.

Thank you for your positive feedback.

Comments

[I. 25–57] I found the Abstract was somehow long and would recommend to further summarise it, as well as reducing the number of keywords.

We have reduced the summary from 365 words to 313 words.

We have reduced the number of keywords as follows: “HIV self-testing, linkage to confirmatory testing and care, phone-based survey, key populations, West Africa.”

[I. 69 - “(...) innovative tool”] It might be helpful to shortly say when was it first launched in the region or other regions for comparison.

We believe the answer to the subsequent question addresses this point.

[I. 74] In line with the previous comment, a very short timeline of the STAR project may help the reader place the ATLAS programme in a regional context.

We have added a timeline of the STAR project and re-organised our paragraph as follows:

“The STAR project carried in Eastern and Southern Africa and funded by Unitaïd aimed to boost the global market for HIVST . The project unfolded in three phases: Phase 1 ran from September 2015 to August 2017, Phase 2 spanned from August 2017 to July 2020, and Phase 3 took place between January 2020 and July 2021 (<https://www.psi.org/fr/project/star/>). Following the experience gained in Eastern and Southern Africa under the STAR project [11, 23–28], the Unitaïd funding agency sought to stimulate HIVST in West Africa where HIV epidemics differs, are more concentrated, and where key populations (e.g., female sex workers and men who have sex with men) share a disproportionate HIV burden.”

[I. 83-84] Please state when did these pilot studies had place.

We added this sentence to the paragraph:

“In Senegal, for instance, the first pilot survey took place between April 2017 and June 2018.”

[Introduction] I wonder if it would be pertinent to cite existing studies on the acceptability of HIV self-testing (if any) here.

We have added the following sentence with references to express this:

“It's a tool that is widely accepted by various populations, especially key populations[11–18].”.

[I. 131 - “secondary distribution was feasible and acceptable”] I recommend to move this conclusion to the Discussion section.

We moved this paragraph to the penultimate position in the discussion section.

[I. 143] Do you have an idea of the period of time where the participants received the kit?

We added the following sentence :

“The time when participants received their HIVST kit was not collected. However, as a survey leaflet was mandatory to participate, we could estimate that all participants received their HIVST kit during the survey period, i.e. between mid-March and mid-June 2021.”

[I.149 - “Participation in the survey was rewarded”] Is this a common choice in the field/region? Please cite literature discussing further on this choice

Following a pilot survey we conducted, we opted to introduce a reward and determined its amount based on the findings.

We rephrased that paragraph, which now stands as

“A pilot survey was initially conducted without offering financial compensation to the participants[38]. . Following the results, we decided to introduce a reward as a token of appreciation for the time participants dedicated to the survey Consequently, completion of the questionnaire was rewarded with 2 000 XOF (≈3.40 USD) of phone communication credit”.

[I. 168] Could you please explain the choice of time between the first and the second phases?

We have added this paragraph to the manuscript to explain this :“As some individuals may delay their decision to undergo a confirmatory test by several weeks/months after using an HIV self-test, we chose a minimum of 3-month gap between our two surveys to potentially get an estimate of the maximum number of participants who eventually underwent confirmatory testing.”

[I. 178] It might be useful for the reader to explicitly state the management plan is written in French here.

We have added the following to the paragraph to explain that the data management plan was written in French:

“The complete project protocol was written in French; similarly, the data management plan, which was an appendix of the protocol, was also drafted in French.”

[I. 205 - Code] The code is clear and easy to navigate thanks to the html output. I however think that the code itself may benefit from more comments on the main procedures.

We thank you for the positive feedback. To enhance the clarity of the file containing the scripts, we have supplemented the document with detailed comments for each code segment.

[Table 1] Please consider putting the participants' notation ((C_i , P_i)) and the formulas for the positivity rates in a separate column (column #2) to facilitate readability.

We have modified the table by separating the column for participants from the phase 1 survey and the formulas.

[I. 237–239] I would recommend to move up the clarification in parentheses, for clarification: “Positivity rates (central hypothesis (...)) were higher...”.

We have modified the sentence by moving the text inside the parenthesis as follows:

“Positivity rates (central hypothesis based on the number of lines) were higher among participants recruited through community-based distribution channels: 4.8% for men and 4.9% for women in the MSM-based channels, and 4.6% for men and 4.2% for women in the FSW-based channels”.

[I. 243–244] It might be interesting to mention the percentage of consistent interpretations (two lines + reactive) here.

*Thank you for your suggestion. We have added the following text accordingly:
“Participation rates were 54% for participants who reported a consistent result (2 lines and reactive), 71.1% for those with an inconsistent result (either 2 lines & non-reactive, or 1 line & reactive), and 65.5% for those reporting a partial result (2 lines & DK-R or DK-R & reactive)”*

[I. 253] Please considering summarise here the results by country.

Due to the small size of our sample, we chose not to present the results by country. However, we found it worthwhile to add a sentence detailing the distribution of participants by country: “Of the 78 participants, 39 (50%) were from Côte d'Ivoire, 31 (40%) from Mali, and 8 (10%) from Senegal (table S3).”

[Table 2] The gray shade calls for attention while it is used for low numbers; you could maybe use superscripts to identify them, instead. Also, please consider adding highlights (boldface, extra horizontal lines or gray shade, etc.) to help navigate this large table. For instance, to ease the identification of the Overall results (maybe using boldface?) and the results using the central hypothesis (maybe using the gray shade?)

While the table was replaced with a graph for improved clarity, we retained it in the supplementary materials after making modifications. We removed the gray shade and added the † symbol for cells with a count less than 25 to align with the new figure.

[I. 266] Please consider adding the term “eligible for” between “participants” and “phase 2”, for emphasis.

The sentence has been rewritten:

“Overall, 34 of the 78 who completed their phase 2 questionnaire (44%) reported having performed confirmatory testing.”

[I. 283 – “Among 34 linked to confirmatory testing, 19 (...) were confirmed”] Could you please comment further on this result in the Discussion section? Were there additional recommendations for the HIV-negative participants? (For instance, to testing again after a period of time?)

In the description of the ATLAS programme, we added the following sentence:

“Individuals with a non-reactive test were invited to retest after 3 months if still exposed to HIV.”

We also elaborated on reasons for not linking to confirmatory testing in the discussion.

“The main reasons given for not linking to confirmatory testing suggest potential misinterpretation of the result or misunderstanding about the need to perform a confirmatory HIV test, highlighting the need for improving messaging around HIVST, in particular when HIV self-testing programs will be scaled-up.”

[I. 284] Please consider mentioning the period of time between HIVST and confirmatory test for these 18 participants.

We have added this sentence:

“Of the 18 participants who initiated ART, 11 (72%) underwent their confirmation test less than a week after their self-test, 2 (11%) did so between 1 and 2 weeks, 1 (5.6%) between 3 and 4 weeks, 1 (5.6%) waited between 1 and 2 months, and 1 (5.6%) proceeded with the test three months later.”

[I. 294–300] I would move these lines to the end of the Discussion, in the form of a conclusion paragraph. Indeed, I would expect to read the numbers and results summarised in the paragraph of lines 322–336 before or along these conclusions. I would recommend to start the Discussion section with a brief summary of the study.

Thank you for your suggestion. We have considered your recommendation to move lines 322-336 to the end of the "Discussion" section in the form of a concluding paragraph. We have also provided a brief summary with numerical data.

[I. 312–313 “it is essential to have received information on its use (...)”] Is there relevant literature that might be cited here to support this statement and/or to help the reader reflect further on this issue? Also, is there a risk of not receiving the supporting information (brochures, videos, etc.) when getting the kit through secondary distribution to be considered and commented here?

Thank you for your insightful questions. Regarding the statement made, we relied on studies, notably those by Vautier et al. 2020 presented at the AFRAVIH conference and Weil et al, 2018, which address this issue.

We have added the paragraph below:

“A study conducted within the framework of the ATLAS project demonstrated that the manufacturer's instructions alone were insufficient in a multilingual context with low literacy levels. The use of additional aids, such as a demonstration video or a toll-free helpline, proved necessary [42]. Similarly, a study carried out in China in 2018 on the unsupervised use of HIVST among 27 MSM found that only 5 (or 19%) made no errors, and 44% received an invalid test result due to various mistakes made [43]. However, the lack of supervision is likely insufficient to explain the inconsistencies observed [23].”

[I. 347–348] Please consider moving or adding this result to the Results section (cf. my previous comment, on line 283)

This result is already presented in the 'results' section through the following sentence: “Among the 27 who reported a consistent reactive result in the phase 1 questionnaire, 15 (56%, 95%CI: 36-74%) linked to confirmatory test, 12 (80%) were confirmed HIV-positive and all started treatment (100%)”

We have though interpreted, this result in the discussion section.

[References] Please correct the following: Check Ref [7] and consider adding a link and date of access. Correct Ref [12]: putting World Health Organization as author. - Consider adding a link and date of access for Refs. [14] and [22].- Check first author for Ref [26]- Could you please provide the information on the Conference Abstract book for Ref [25] instead?

We have reviewed the references in question. All have been updated and are now free of errors.

REVIEWER 3

Summary

First, I send my sincere thanks for the chance to review this very informative article on HIV self-testing Positivity rate and linkage to confirmatory testing and care. The article highlighted the use of a very innovative survey methods and channels to reach very important groups within the populations who are considered hard to reach or no suitable tool to maintain their confidentiality. The overall Positivity rate of 2.5% which is higher than reported on conventional methods shows the need to adopt and improve the method used in this study.

Thank you for your positive feedback.

Comments

Title/abstract/introduction

The Author provided a clear title and comprehensive abstract that reflects the content of the study. However, in the introduction line 136 about the group of participants targeted with complimentary survey (which I understand as phase 2 of the survey), Author may wish to add other groups involved in complimentary survey and not those with reactive results only.

We have modified the sentence by adding the other groups concerned by the complementary survey:

“A complementary survey was conducted among those with an HIVST reactive result or had reported two lines in the first survey.”

Materials and Methods

The data management plan which has been put publicly would be nice to be translated in English and update the link in the line 178.

We have added the following to the paragraph to explain that the data management plan was written in French:

“The complete project protocol, including the data management plan (required by the ethics committees), was written in French.”

Results

Results have been presented in a well categorised manner to answer the study objectives of HIVST results, HIVST Positivity rate and Linkage to Confirmatory test. As the Author decided to discuss the level of positivity rate for age groups it will be very informative to appear in the Positivity rate paragraph before discussing about it.

Thank you for your comment. We have added a paragraph to the HIVST positivity rate sub-section which briefly describes the positivity rates by age group. The paragraph is as follows:

“When analysing positivity rates by age group and according to our different hypotheses (low, central, high), the variations are as follows. For those under 24 years old, the rate ranges from 2.2% to 7.4% across countries based on the reported result and from 3.1% to 5.9% based on the reported number of lines. In the 25-34 age bracket, it fluctuates between 2.7% and 9.5% based on the reported result and from 4.9% to 7.8% based on the reported number of lines. Lastly, for individuals 25 and older, the rate lies between 1.8% and 12% based on the reported result and between 4.9% and 9.3% based on the reported number of lines (table S3)”

Discussion

The Author discussion on age group is very important for demonstrating the positivity rate in respect to certain age, however age categorisation differ from that in discussion (line 340) differs from that in appendix Table S1. Please review accordingly.

While Table S1 does not provide positivity rates for the different age groups, it does feature an age group categorisation consistent with that discussed in the main text. We have also added a table that displays the positivity rates by age group and country (table S3).

Author should provide a clear conclusion on the overall effectiveness of HIVST, and the survey method used in this study for other areas to adopt and improve in comparison with conventional testing.

By reorganizing the discussion, the benefits of the phone survey (and its limitations) are now clearly presented at the end of the discussion.

“The implementation of a telephone survey, aimed at gathering information from HIVST users while preserving anonymity and without interfering with secondary distribution, has proven to be very useful to evaluate the ATLAS program. However, its high cost makes it difficult to integrate it into national strategies for assessing the impact of HIVST. Nevertheless, other impact evaluation methods, such as data triangulation [35] and modelling [36], may prove more suitable for routine monitoring of HIVST’s impacts.”

Author may wish to discuss major reasons for not linking to confirmatory testing and maybe recommending a plausible solution for future studies.

We added the following paragraph in the discussion:

“The main reasons given for not linking to confirmatory testing suggest potential misinterpretation of the result or misunderstanding about the need to perform a confirmatory HIV test, highlighting the need for improving messaging around HIVST, in particular when HIV self-testing policies will be scaled-up.”

References


No comment, all are appropriate and accurate.

Thank you for this positive feedback.

Tables and figures

Tables and figures are clear and comprehensive as they all contain useful information which were not able to be full displayed in paragraphs.

All tables have titles and useful caption which help in understanding the content of the respective table



Thank you for this positive feedback.