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 utilized 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.

Major 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.

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 utilized, 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.

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.

Figure:

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