PEER REVIEW HISTORY

BMJ Paediatrics Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Acceptability and usability of a pediatric HIV screening tool in high-volume outpatient settings in Malawi, perspectives from caregivers and health care workers
AUTHORS	Katirayi, Leila Maphosa, Thulani Kudiabor, Kwashie Kayira, Dumbani Gross, Jessica Hrapcak, Susan Chamanga, Rachel Nkhoma, Harrid Puleni, Paul Maida, Alice Ahimbisibwe, Allan Woelk, Godfrey

VERSION 1 – REVIEW

REVIEWER	Reviewer name: Ms. Margaret Prust Institution and Country: 383 Dorchester Ave, Suite 300, Boston, 02017, United States Competing interests: None
REVIEW RETURNED	07-Nov-2022

GENERAL COMMENTS	Thank you for the opportunity to review this paper. While qualitative feedback on the acceptability of HIV screening tools such as this one is important, this paper is currently written in such a way that leaves a lot of gaps and will make it difficult for readers to really understand or act on these results. See below for more detailed comments: 1. Abstract: Though the title does say that the study is in Malawi, the abstract doesn't mention the location. I think that would be important to add to the abstract. 2. Background: In the last paragraph of the Background (page 4, line 49) that status of effectiveness testing in Malawi needs to be better explained. While the acceptability and usability (subject of this paper) is important, the effectiveness needs to be established first. From the current description, it sounds like the effectiveness testing is going on, but the results are not reported here. Presumably that's a different paper, but I feel that those results needs to be referenced clearly (maybe give a brief overview or at least give the citation for the paper under review). Also in this paragraph, this sentence is confusing "In addition to the Z-HRST questions, the EGPAF version of the tool…" It makes it sound like the EGPAF tool has additional questions on top of the Z-HRST questions, but it's not really clear. 3. Methods: It would be helpful to explain a bit more about why you wanted the sample "to have an equal distribution of caregivers that were biological and non-biological". Do non-biological care givers include anyone who is not the parents? Are grandparents or other

	relatives included? How often is it that non-biological care givers bring kids to these clinics? Why did you think it would be important? 4. Methods: You note that other literature indicated that theoretical saturation could be met with about 10-12 interviews. That makes sense in terms of study planning, but for execution of the study, how did you ensure that theoretical saturation was actually met in your study with that sample size. Theoretical saturation very much depends on the content and sample of each individual study, so specific measures would be needed in the analysis process to assess whether theoretical saturation was met. Usually theoretical saturation is also assessed within each sub-group of the sample if there are sub-groups and if you plan to segment or compare results between groups. So in this case it seems like you have 2 sub-groups – biological and non-biological caregivers, is that right? Or is it 4 groups when accounting for kids aged 2-9 and 10-14? 5. Methods: For the caregivers sample, it seems like the feedback provided by caregivers may vary greatly based on whether the child got an HIV test following the screening and whether that HIV test was positive or not. How were those outcomes represented in the sample and what is the rationale for not breaking down the results based on those buckets? In the limitations section, I think you are saying you only interviewed people who got the HIV test, but that information is buried and should be explained more clearly in the methods. 6. Data collection: it would be helpful to disclose the gender and other demographics of the data collector(s). While it's not always possible to match data collector demographics to the study sample, we know that when demographic characteristics are not well matched, it can influence responses. 7. Methods: The screening tool should be provided as a figure or supplemental doc so that the readers know what tool feedback is being given on. 8. Methods: It would be helpful to have more information about when data collection happened relative to tool roll out and what the roll out looked like. For example, how much training did ECs get on the tool? What did their training include? How long had they been using the tool when data collection happened? Approximately how many time had they used the tool? Also there's some reference to hospitalizations, but I think this tool is only being administered in outpatient – is it being used with every outpatient client? 9. Methods: I think it would be helpful to share the interview guides as supplemental docs. 10. Analysis: When you talk about how "similarities and differences between the two groups were explored." Do you mean biological and non-biological caregivers? Or caregivers vs ECs? Which two groups? 11. Analysis: How many people conducted the analysis and how were disagreements in thematic coding reconciled? 12. Results, Sample: 5.7 months time in their position for ECs seems low. Is there a lot of turnover? It may be useful to report the median, min and max. 13. Results: The ECs also noted feeling more connected to the community after implementing this tool." Could you explain this comment more? The quotation talks about parents wanting to talk to the ECs when they come to the hospital. This still feels a bit vague though – please dive deeper into this and why this is happening.

	14. Results: Is HIV testing available on request by anyone? It's interesting in the recommendations section that people are to pleased to have the chance to test – but isn't testing available if people ask for it? Why are people not just asking for it? 15. Discussion: I recommend a figure or table that can highlight key recommendations. 16. Discussion: The paragraph about reference #24 seems a little disconnected from the rest of the text given that this was not administered in people's homes. Perhaps you could give a bit more background about why this info is important. 17. Discussion: What settings do you believe these results are generalizable to? In Malawi only? Does endemicity of malaria play a role? Or rather, what aspects of the findings are likely to be generalizable where?

REVIEWER	Reviewer name: Dr. Mary Bitta Institution and Country: KEMRI-Wellcome Trust Research Programme, 230, Kilifi,, Kenya Competing interests: None
REVIEW RETURNED	01-Dec-2022

GENERAL COMMENTS	I thank the editors for an opportunity to review this manuscript that was a qualitative evaluation of the acceptability of an HIV paediatric screening tool. Below are a few suggestions that may improve the manuscript: METHODS - Provide more details on the analysis conducted. From the manuscript it appears that thematic analysis was conducted but it is not clear whether (i) more than one person coded the transcripts (ii) how discrepancies if any were resolved (iii) whether any other data sources such as notes were used as part of the analysis etc. Consider using the COREQ guidelines for reporting qualitative studies. - Consider providing the semi-structured interview guide as supplementary material DISCUSSION 1. The ECs provided hints to potential barriers to successful implementation of the tool that have not been extensively discussed. For example, to improve cooperation with facility staff, one EC cited that "it was only a study, and it would not last forever", which suggests that real in clinical settings, uptake may be lower. 2. - The authors have highlighted the limitation of not including a sample comprising 10–14-year-olds as participants therefore the conclusion should include this caveat, that the feasibility in this age group, which may have a different risk profile from younger children, could not be assessed in this study.

VERSION 1 – AUTHOR RESPONSE

Thank you for these detailed comments and feedback. Below you will find our responses.

Editor in Chief Comments to Author :

Replace the term "Expert Clients" with "Health Care Workers" throughout the paper. Readers know what HCWs are.
Expert Clients (ECs) are not clinically trained, so it would be inaccurate to refer to them as HCWs. ECs are HIV-positive people who provide peer support. We see that they were incorrectly referred to as 'lay cadre of HCWs' and this reference to 'HCWs' has been deleted. Additional text has been added to the study population section to explain EC group. Thank you for identifying this discrepancy.

Add the semi-structured interview guide as an appendix
Attached.

Abstract Conclusion- state what you actually found: 'the tool was generally supported but there were some minor problems'

Thank you for this suggestion. We have edited the abstract conclusion per your guidance.

What this study adds- The first two statements are methods and inappropriate for this section

Thank you for this suggestion. We have edited this section to include results from the study.

How this study might affect section- Rephrase to something more specific

Thank you for this suggestion. We have edited this section to include more specific information.

Reviewer: 1- Ms. Margaret Prust

1. Abstract: Though the title does say that the study is in Malawi, the abstract doesn't mention the location. I think that would be important to add to the abstract.
The location has been added.

2. Background: In the last paragraph of the Background (page 4, line 49) that status of effectiveness testing in Malawi needs to be better explained. While the acceptability and usability (subject of this paper) is important, the effectiveness needs to be established first. From the current description, it sounds like the effectiveness testing is going on, but the results are not reported here. Presumably that's a different paper, but I feel that those results needs to be referenced clearly (maybe give a brief overview or at least give the citation for the paper under review). Also in this paragraph, this sentence is confusing "In addition to the Z-HRST questions, the EGPAF version of the tool…" It makes it sound like the EGPAF tool has additional questions on top of the Z-HRST questions, but it's not really clear.
The effectiveness analysis of the modified tool is ongoing and not published yet.
Yes, you are correct that the EGPAF tool added additional questions on top of the Z-HRST questions, this is discussed in the last paragraph of the introduction. This text has been highlighted in yellow in the tracked changes version.

3. Methods: It would be helpful to explain a bit more about why you wanted the sample "to have an equal distribution of caregivers that were biological and non-biological". Do non-biological care givers include anyone who is not the parents? Are grandparents or other relatives included? How often is it that non-biological care givers bring kids to these clinics? Why did you think it would be important?
This information has now been added to the study population section in the methods.

4. Methods: You note that other literature indicated that theoretical saturation could be met with about 10-12 interviews. That makes sense in terms of study planning, but for execution of the study, how did you ensure that theoretical saturation was actually met in your study with that sample size.

Theoretical saturation very much depends on the content and sample of each individual study, so specific measures would be needed in the analysis process to assess whether theoretical saturation was met. Usually theoretical saturation is also assessed within each sub-group of the sample if there are sub-groups and if you plan to segment or compare results between groups. So in this case it seems like you have 2 sub-groups – biological and non-biological caregivers, is that right? Or is it 4 groups when accounting for kids aged 2-9 and 10-14?
While we were sure to include an equal balance of biological and non-biological caregivers, and caregivers of ages 2-9 and 10-14, these were not subgroups of the population (meaning they were not analyzed as a separate groups). We were intentional in our structure of the caregiver group to ensure that it was equally representative of the different types of caregivers. We analyzed the caregivers as one unit, and the health care providers as a second unit. Saturation was determined to have been met due to no new emerging data among the two groups. This has been further explained in the manuscript, in the analysis section of the methods.

5. Methods: For the caregivers' sample, it seems like the feedback provided by caregivers may vary greatly based on whether the child got an HIV test following the screening and whether that HIV test was positive or not. How were those outcomes represented in the sample and what is the rationale for not breaking down the results based on those buckets? In the limitations section, I think you are saying you only interviewed people who got the HIV test, but that information is buried and should be explained more clearly in the methods.
We have added additional text to clarify that those who were screened received an HIV test immediately after the screening, regardless of the outcome of the screening.
We did not compare HIV-positive kids vs. non-HIV-positive kids because the objective of the study was to understand the acceptability and usability of the tool among caregivers in general. As mentioned earlier, more information has been added to the study population section specifying that caregivers were analyzed as one unit.

6. Data collection: it would be helpful to disclose the gender and other demographics of the data collector(s). While it's not always possible to match data collector demographics to the study sample, we know that when demographic characteristics are not well matched, it can influence responses.
We agree that for in-depth interviews, especially among more at risk groups and exploring very sensitive topics, the demographics of the data collectors can significantly influence the interviewers. However, since this study used a more a structured tool and was a fairly brief interview, we do not think the demographics had much influence on the interviews.

7. Methods: The screening tool should be provided as a figure or supplemental doc so that the readers know what tool feedback is being given on.
We agree. The screening tool has been included.

8. Methods: It would be helpful to have more information about when data collection happened relative to tool roll out and what the roll out looked like. For example, how much training did ECs get on the tool? What did their training include? How long had they been using the tool when data collection happened? Approximately how many time had they used the tool? Also there's some reference to hospitalizations, but I think this tool is only being administered in outpatient – is it being used with every outpatient client?
You are correct, the tool was only administered in outpatient units. We have added text to the study population section to specify that caregivers were recruited from the outpatient clinics.
We have added the requested information regarding the training of the ECs to implement the screening tool in the methods section. Information about when the data was collected in relation to when the tool was rolled out has also been added into the methods section.

9. Methods: I think it would be helpful to share the interview guides as supplemental docs.
We agree, this has been added as a supplement document.

10. Analysis: When you talk about how “similarities and differences between the two groups were explored.” Do you mean biological and non-biological caregivers? Or caregiver’s vs ECs? Which two groups?
This is referring to caregivers vs. ECs. This language has been updated to reflect that. Also, the additional language added in the study population section (as discussed above), clarifies that all caregivers were analyzed as one unit, and all health-care providers as a second unit.

11. Analysis: How many people conducted the analysis and how were disagreements in thematic coding reconciled?
The following additional information has been added into the analysis section: All data were reviewed by the qualitative lead and two research assistants. Any discrepancies were discussed among the group and repeatedly reviewed until consensus was reached. No additional data beyond the transcripts were reviewed.

12. Results, Sample: 5.7 months time in their position for ECs seems low. Is there a lot of turnover? It may be useful to report the median, min and max.
We have spoken with the field team and this is a typical amount of time for lay positions. There is a lot of turnover, and that is mostly due to short contracts for lay staff and competition among the international partners.

13. Results: The ECs also noted feeling more connected to the community after implementing this tool.” Could you explain this comment more? The quotation talks about parents wanting to talk to the ECs when they come to the hospital. This still feels a bit vague though – please dive deeper into this and why this is happening.
The statement about feeling more connected to the community was referring to understanding the community’s health status better. Since this is already stated two sentences earlier, instead of repeating this statement, we have just deleted the sentence referenced to.

14. Results: Is HIV testing available on request by anyone? It’s interesting in the recommendations section that people are to pleased to have the chance to test – but isn’t testing available if people ask for it?
Voluntary Counseling and Testing (VCT) is available on request. However, before testing the provider must ascertain if indeed one needs the test using MOH guidelines.
Why are people not just asking for it? It may look as if people don’t ask for it because the study is looking at children as sub population, the mothers go to maternal child health unit for the child and testing is not currently optimized in that unit.

15. Discussion: I recommend a figure or table that can highlight key recommendations.
A table of recommendations has been added.

16. Discussion: The paragraph about reference #24 seems a little disconnected from the rest of the text given that this was not administered in people’s homes. Perhaps you could give a bit more background about why this info is important.
This paragraph follows the discussion about concerns with lack of confidentiality at the health facility and informs the reader that previous research has demonstrated that confidentiality is not such a challenge when visiting patients in the community. We anticipate that our paper will be read by implementers, so we believe it is important to provide this information.

17. Discussion: What settings do you believe these results are generalizable to? In Malawi only? Does endemicity of malaria play a role? Or rather, what aspects of the findings are likely to be generalizable where? These results are generalizable to health care settings in Malawi that are likely to screen children for HIV using a screening tool. This is because the study demonstrates the need to provide a thorough orientation and training of HCWs on a potential tool, and to be able to ensure adequate staffing and resources.
Please see additional text added at the end of the discussion section:
While qualitative studies are not usually generalizable, we believe our results may be applicable to high volume outpatient health care settings in Malawi that are likely to screen children for HIV using a screening tool. This is because the study demonstrates the need to provide a thorough orientation and training of HCWs on a potential tool, and to be able to ensure adequate staffing and resources.

Reviewer: 2
Dr. Mary Bitta, KEMRI-Wellcome Trust Research Programme
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METHODS

- Provide more details on the analysis conducted. From the manuscript it appears that thematic analysis was conducted but it is not clear whether (i) more than one person coded the transcripts (ii) how discrepancies if any were resolved (iii) whether any other data sources such as notes were used as part of the analysis etc. Consider using the COREQ guidelines for reporting qualitative studies.
Additional information has been added to the analysis section to clarify that thematic analysis was conducted, all data were reviewed by the qualitative lead and two RAs, discrepancies were resolved by the group reviewing the data until consensus was reached and no other data sources beyond the transcripts were used in the analysis.

- Consider providing the semi-structured interview guide as supplementary material
This has been added.

DISCUSSION

1. The ECs provided hints to potential barriers to successful implementation of the tool that have not been extensively discussed. For example, to improve cooperation with facility staff, one EC cited that "it was only a study, and it would not last forever", which suggests that real in clinical settings, uptake may be lower.
Additional language has been added to the discussion section to respond to this.

2. - The authors have highlighted the limitation of not including a sample comprising 10–14-year-olds as participants therefore the conclusion should include this caveat, that the feasibility in this age group, which may have a different risk profile from younger children, could not be assessed in this study.
Children were screened, but only caregivers were interviewed. Those screened did include children 10-14 years of age, but the interviews were conducted with the caregivers only, not the 10-14 years, who may have had a different opinion. We have edited the limitations section to make it clearer to the reader.