RESEARCH ARTICLE

REVISED HIV index testing services in urban Lusaka: a retrospective review of medical records [version 2; peer review: 1 approved, 1 approved with reservations, 1 not approved]

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Abstract

Background: As the proportions of people living with HIV (PLHIV) who do not know their HIV infection status decrease, reaching the remaining few who are asymptomatic and not in contact with the health care system becomes a critical challenge. Therefore, reaching the first 90 of the UNAIDS 90-90-90 targets will require effective and efficient HIV testing approaches. The number of PLHIV who know their HIV status and who receive antiretroviral therapy could increase by the expansion of index testing services.

Methods: This project was a retrospective study looking at medical records of HIV positive clients who were elicited for index testing between October and December 2019. It was conducted in three high volume health facilities in Matero Urban sub-district 3 in Lusaka, Zambia.

Results: The HIV test outcomes for index contacts were as follows: 452 index contacts (53.5%) tested HIV negative, 113 index contacts (13.4%) tested HIV positive, 108 index contacts (12.8%) were known HIV positive, and 172 index contacts (20.4%) were not yet tested for HIV. Of the 113 contacts who tested HIV positive, 90 index contacts started anti-retroviral therapy within 7 days (79.6%). The total number of 845 contacts were elicited from 604 index clients, giving a low elicitation ratio of 1:1.4. There was not much difference between gender for elicited contacts (423 men and 422 women). A total number of 565 index contacts were eligible for HIV test. 113 of them tested HIV positive, representing a positivity yield of 20%. Pearson Chi-Square test value was 0.498 and the p value was 0.481. This result is not significant since p value (0.481) is greater than the

Open Peer Review

Approval Status

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version 1 30 Sep 2020	 view	 view	

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Basavaprabhu Achappa, Kasturba Medical College and Hospital, Manipal Academy of Higher Education, Mangalore, India
- Taurayi A. Tafuma** , Zimbabwe Health Interventions, Harare, Zimbabwe
- Moses Katbi**, U S Agency for International Development, Abuja, Nigeria

designated alpha level (0.05).

Conclusions: HIV programs need to explore and address barriers to HIV partner testing services to avoid over-testing and maximize HIV case identification (thus, improving HIV testing positivity yield).

Keywords

HIV, Index Testing, Services, Lusaka

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International Development, Abuja, Nigeria
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Any reports and responses or comments on the
article can be found at the end of the article.

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Author roles: **Katamba C:** Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Project Administration, Resources, Software, Supervision, Validation, Visualization, Writing – Original Draft Preparation, Writing – Review & Editing

Competing interests: No competing interests were disclosed.

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REVISED Amendments from Version 1

The title has been reviewed and improved to “HIV index testing services in urban Lusaka: a retrospective review of medical records” to be in line with the narratives. The aim of the study was refined specifying objective to review of existing medical files/registers instead of medical records in Matero Subdistrict of Zambia for more clarity. We have also conducted a more detailed literature review on index testing in the introduction section to support the importance of the study. Under the methods section, the term “phase” (under sampling) was deleted since this particular study was not conducted in phases. The study population was specified to males and females. The exclusion criteria were clarified, excluding index clients identified through other service entry points other than VCT and PICT such as MCH and VMMC. The variables tracked were also aligned in accordance with the study objective. The article now mentions the details of informed consent taken from the PLHIV while approaching their contacts for HIV testing. Additional analytical framework detailing total sample, and the details of contact tracing in cases where sexual partners were not the only contacts has been provided. We used the STROBE cross sectional reporting guidelines to ensure the study meets international standards for peer reviewed articles. We summarized the results in the narrative for better presentation. The discussion section of the study has been rewritten including recent references. The conclusion has also been refined in line with the study findings. The revised version has also acknowledged various contributors to index testing in Lusaka.

Any further responses from the reviewers can be found at the end of the article

Introduction

According to the 2018 UNAIDS Global AIDS Update¹, there are an estimated 36.9 million people living with HIV (PLHIV). Recently, marked progress on HIV test and treat strategy has been achieved by countries’ commitment to achieve the UNAIDS 90-90-90 targets by 2020¹. As of December 2017, three out of every four PLHIV knew their HIV status globally; 90% of HIV-infected individuals are expected to know their HIV status by 2020¹.

According to the ZAMPHIA 2016 fact sheet², only 67.3% of PLHIV (ages 15 – 49) knew their HIV status. In 2017, Zambia had 1.1 million PLHIV and 48,000 new HIV infections³. Without HIV testing services interventions targeted to key populations, including sexual partners of index clients infected with HIV, it will be hard to end the HIV epidemic by 2030⁴.

The cornerstone for achieving the UNAIDS 90-90-90 targets by 2020 begins with PLHIV knowing their status. As the proportions of those living with HIV who do not know their HIV infection status decrease, reaching the remaining few who are asymptomatic and not in contact with the health care system becomes a critical challenge. Therefore, reaching the first 90 goal will require effective and efficient HIV testing approaches. In Zambia, about 25% of adult men living with HIV didn’t know their HIV status in 2018. A study conducted in Zambia revealed that index testing and targeted community-based HTS are effective strategies to identify men

living with HIV⁵. Men and young people have shown limited uptake of HIV testing services under standard facility- and community-based services. Approaches such as HIV self-testing delivered at scale using several different models reached a high proportion of men, young people and first-time testers in Malawi, Zambia and Zimbabwe⁶.

The number of PLHIV who know their HIV status and who receive antiretroviral therapy (ART) could increase by the expansion of index testing services. This will result in the reduction of the number of people who can transmit the virus, and subsequently in reduced new HIV infections. In another qualitative study conducted in Malawi and Zambia, most participants considered different approaches to partner HIV testing to be acceptable. However, there are concerns about each and implementation challenges need to be addressed⁷.

The objective of this study was to review existing medical files and registers in Matero subdistrict of Zambia in order to describe existing information on index testing and propose better ways to improve HIV index testing positivity yield.

Methods

Study design

This was a retrospective study looking at index registers of clients who tested HIV positive and were elicited for index testing between October and December 2019. The study was conducted between January and February 2020 in three high volume health facilities in Matero sub-district 3 of Lusaka district in Zambia. The study facilities included Matero First Level Hospital, Matero Main Clinic, and George Health Centre. The overview results of the study, which looked at the effectiveness of HIV index testing, were described. The analysis examined index clients’ identification, elicitation of index contacts, and testing of index contacts. The main quantitative outcome of interest for this analysis was the success of index testing to improve yield for HIV Testing Services (HTS) among female and male, and across ages among index clients; and secondly ART initiation for positive index contacts.

Sampling

This retrospective study used a total sample enumeration technique.

The study population comprised all index clients (males and females at the study facilities) who had been diagnosed with HIV, gave informed consent and were elicited for HIV index contact testing during the study period.

Inclusion criteria:

HIV positive clients (index clients or index cases) and their sexual contacts (sexual partners of index clients who have been elicited and offered HIV index testing services). The study participants included:

- HIV positive clients identified through either voluntary counseling and testing (VCT) or provider-initiated counseling and testing (PICT)

- Being documented in HIV index registers
- Having elicited at least one sexual partner

Exclusion criteria:

- Index clients identified through other service entry points other than VCT and PICT (such as MCH and VMMC)
- Clients not documented in index testing registers
- Contacts listed as biological children of index clients

Data sources, variables and collection

Data on the index clients (cases) characteristics (age, gender, contacts, ART status), and the contacts' HIV test outcome (tested positive, tested negative, known positive, not tested, initiation status) were extracted from the HIV index testing registers into a structured pro forma. The HIV testing positivity yield was calculated (tested positive over total tested). The index testing cascade variables included: cases accepting index testing, elicitation ration, and contacts reached with testing services (disaggregated by HIV testing status).

Data management and analysis

Data entry and analysis was performed using Statistics Package for Social Science software (SPSS version 16.0). Descriptive statistics were performed to describe the background characteristics of index clients and successful testing of index contacts. Analysis entailed simple frequencies of the main study outcomes and cross-tabulations. The association of index contacts' gender with the HIV test outcome of the index contacts was examined using the Chi Square test. An additional analytical framework on index testing cascade was provided.

Ethical considerations

Ethical clearance was sought and obtained from the ERES Converge Zambian Institutional Review Board (IRB) (approval number: Ref. No. 2019-Nov-009), and authority to conduct research was obtained from the National Health Research Authority (approved on 29th January 2020) before the commencement of the study. Informed written consent for this study was waived by the IRB and National Health Research Authority due to the retrospective nature of the study. Index testing services are offered as part of the recommended national

HIV testing services. Clients' confidentiality was observed by assigning a serial number to each participant that was known only to the health care provider. Only the client's initials and serial number appeared on the data collection forms.

STROBE cross sectional guidelines

We used the STROBE cross sectional reporting guidelines to ensure the study meets international standards for peer reviewed articles⁸. A checklist was completed by entering the page numbers from the manuscript where readers can easily find each of the listed items. Where the article didn't currently address all the items on the checklist, the text was modified to include the missing information. Where certain that an item does not apply, we wrote "n/a" and provided a short explanation.

Results

The total number of index clients included in the study was 604. Matero First Level Hospital leads the participation per facility with 292 participants, followed by George Health Centre and Matero Main Clinic with 164 and 148 participants, respectively. The total number of female participants was 314 (representing 52%) and male participants was 290 (representing 48%) (Table 1).

The age of participating index clients ranged from 16 to 78 years, with mean age calculated at 34 years (SD = 9.1). Out of the total number of 604 participants, 514 clients (85.1%) were married, 85 clients (14.1%) were unmarried, 3 clients were widowed, and 2 clients were divorced.

Concerning the time spent from HIV test to the initiation of ART for index cases: 595 index clients started ART within 7 days (98.5%), 1 index client started ART within a month (0.2%), 1 index client started ART after 1 month (0.2%), and there was no evidence of starting ART for 7 clients (1.2%).

The number of contacts elicited per index client were as follows: 413 clients (68.4%) elicited 1 sexual contact each, 146 clients (24.2%) elicited 2 sexual contacts each, 40 clients (6.6%) elicited 3 sexual contacts each, and 5 clients (0.8%) elicited 4 sexual contacts each (Table 2).

The mean age of elicited contacts was calculated at 33 years (range, 17–80 years SD = 9.4). From the total number of 845

Table 1. Number of participants (index cases) by gender, month, and facility.

	Matero Main Clinic		Matero First Level Hospital		George Health Center		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
October 2019	20	26	57	56	26	28	103	110
November 2019	26	28	37	25	26	28	89	81
December 2019	23	25	49	68	26	30	98	123
Total	69	79	143	149	78	86	290	314
Grand total	148		292		164		604	

Table 2. Number of elicited contacts by gender, month, and facility.

	Matero Main Clinic		Matero First Level Hospital		George Health Center		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
October 2019	30	25	113	110	35	34	178	169
November 2019	35	39	45	65	35	27	115	131
December 2019	36	35	52	55	42	32	130	122
Total	101	99	210	230	112	93	423	422
Grand total	200		440		205		845	

elicited contacts, 604 contacts were main partners of index cases, 238 contacts were additional partners of index cases, and 3 contacts were casual.

The time spent from elicitation to HIV testing of index contacts varied across participants: 294 index contacts were tested within 7 days (34.8%), 76 index contacts were tested within 14 days (9%), 77 index contacts were tested within a month (9.1%), 133 index contacts were tested after 1 month (15.7%), and 265 index contacts were not yet tested (31.4%).

The HIV test outcomes for index contacts were as follows: 452 index contacts (53.5%) tested HIV negative, 113 index contacts (13.4%) tested HIV positive, 108 index contacts (12.8%) were known HIV positive, and 172 index contacts (20.4%) were not yet tested for HIV. Of the 113 contacts who tested HIV positive, 90 index contacts started ART within 7 days (79.6%). There was no documented evidence of starting ART for 23 HIV positive contacts (20.4%).

The total number of 565 index contacts were tested for HIV and 172 index contacts had not yet been tested for HIV (Table 3). The Pearson Chi-Square test value was calculated at 0.498 and the p value was 0.481.

The overall index testing cascade is represented in Figure 1 below.

The total number of HIV positive cases reported during the study period were 617, out of whom 13 did not accept index testing (had no recorded elicitation). We excluded 57 cases because of elicitation of children or siblings only as contacts (without any sexual partner elicited).

Discussion

The overall key findings of our study are shown in the result section. The 98 percent acceptability rate for index testing services in Lusaka is at an agreeable level. Though, continuous efforts are needed to cover every who is eligible for the service. The index cases to index contacts elicitation ratio of 1 to 1.4 is below the documented ratio of 1 to 1.8 in Zambia⁵. There was not much difference between gender for elicited contacts (423 males and 422 females). A total number of 565 index contacts

Table 3. Contact gender vs contact HIV status cross tabulation.

			Contact HIV status		Total
			Tested	Not tested	
Contact gender	Male	Count	275	89	364
		Expected Count	279.1	84.9	364.0
	Female	Count	290	83	373
		Expected Count	285.9	87.1	373.0
Total		Count	565	172	737
		Expected Count	565.0	172.0	737.0

were eligible for HIV test. 113 of them tested HIV positive, representing a positivity yield of 20%. This index testing positivity yield is below the expected yield of above 25% as reported by several other studies⁹⁻¹⁷. It is not in keeping with many studies that have shown that index partner testing has the potential to increase HIV testing services (HTS) uptake; identify and diagnose HIV infected partners (yield ranging from 35% to 62% without reported intimate partner violence (IPV)⁹. The current study has also revealed that only 80 percent of named contacts were reached with index testing services. Limitations to index testing such as relationship conflict have been documented⁷. For partner notification, additional barriers included women losing letters, being fearful to give partners letters, being unable to read and men refusing to come to the clinic, lack of privacy or confidentiality and stigma⁷. Other implementation challenges in personnel, resources or space have also been noted⁷. Specific barriers to index testing in Zambia need to be explored and addressed for optimal index testing positivity yield. The current linkage rate for positive contacts is 79.6%. Most index clients (98.5%) had documented evidence of starting ART within 7 days of HIV diagnosis. This demonstrates strongly that the test and start

Figure 1. Index testing cascade.

strategy is being implemented to scale in Matero urban sub-district of Lusaka. The calculated Chi-Square test value was 0.498 and the p value was 0.481; so, there was no association between the gender of the contact and their HIV testing status. Our study results have nonetheless provided descriptive data on the current state of index testing services in selected health facilities in Lusaka. One other strength of this study is that it can be easily reproduced elsewhere as it follows the international STROBE cross sectional study guidelines⁸. The limitation of study lies in its retrospective nature using programmatic data.

Conclusion

HIV index testing services can be an effective way to improve HIV case identification. It has yielded a positivity rate of 20% in Matero Urban area of Lusaka. Further studies are needed to understand specific challenges to index testing for optimized testing yield in the context of Zambia. Our recommendation is that HIV programs need to explore and address barriers to HIV partner testing services to maximize targeted HIV case finding, minimize un-necessary testing, and ultimately improve HIV testing positivity yield.

Data availability

Underlying data

Harvard Dataverse: Cibangu, Katamba, 2020, "Replication Data for: , "HIV INDEX TESTING SERVICES IN URBAN LUSAKA: a review of medical records", <https://doi.org/10.7910/DVN/QOQM3K>¹⁸.

Extended data

Harvard Dataverse: Replication Data for: HIV index testing services in urban Lusaka: a review of medical records, <https://doi.org/10.7910/DVN/FSHCQ6>¹⁹.

This project contains the following underlying data:

- Data collection tool

Harvard Dataverse: STROBE Checklist for HIV index testing services in urban Lusaka study,, <https://doi.org/10.7910/DVN/SQLPBO>²⁰

This project contains the following underlying data:

- STROBE-cross-sectional_checklist_Cibangu_Katamba_Index_Testing.docx

Data are available under the terms of the [Creative Commons Zero "No rights reserved" data waiver](#) (CC0 1.0 Public domain dedication).

Acknowledgments

I am highly appreciative of the CDC for the opportunity given to me to serve as Medical Mentor in the CDC/LPHO cooperative agreement and mentorship program. I am also thankful to the Lusaka Provincial Health Office for availing me with the unforgettable and life-changing opportunity which saw me lead the HIV/TB project in Matero Sub-district of Lusaka, the Lusaka District Health Office leadership, the Matero Health Management team for their guidance and support. My most honest and sincere gratitude goes to Dr. Monde Muyoyeta for taking me through the process of research protocol development and for her supervisory support throughout this project. Finally, I am grateful to all my fellow mentors, Healthcare providers, volunteers, community health workers, and to the many recipients of care who, through the Lusaka Provincial Health Office/Matero Sub-district & all HIV program implementing partners, accepted to participate in this research for their hard work.

References

1. UNAIDS, Joint United Nations Programme on HIV/AIDS, GLOBAL AIDS UPDATE: **Miles to go: closing gaps; breaking barriers; righting injustices**. 2018.
[Reference Source](#)
2. ZAMBIA POPULATION-BASED HIV IMPACT ASSESSMENT ZAMPHIA 2015–2016.
[Reference Source](#)
3. <https://www.avert.org/professionals/hiv-around-world/sub-saharan-africa/zambia>.
4. Katbi M, Adegboye A, Adedoyin A, *et al.*: **Effect of clients Strategic Index Case Testing on community-based detection of HIV infections (STRICT study)**. *Int J Infect Dis*. 2018; **74**: 54–60.
[PubMed Abstract](#) | [Publisher Full Text](#)
5. Mwango LK, Stafford KA, Blanco NC, *et al.*: **Index and targeted community-based testing to optimize HIV case finding and ART linkage among men in Zambia**. *J Int AIDS Soc*. 2020; **23 Suppl 2**(Suppl 2): e25520.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
6. Hatzold K, Gudukeya S, Mutseta MN, *et al.*: **HIV self-testing: breaking the barriers to uptake of testing among men and adolescents in sub-Saharan Africa, experiences from STAR demonstration projects in Malawi, Zambia and Zimbabwe**. *J Int AIDS Soc*. 2019; **22 Suppl 1**(Suppl 1): e25244.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
7. Hershow RB, Zimba CC, Mweemba O, *et al.*: **Perspectives on HIV partner notification, partner HIV self-testing and partner home-based HIV testing by pregnant and postpartum women in antenatal settings: a qualitative analysis in Malawi and Zambia**. *J Int AIDS Soc*. 2019; **22 Suppl 3**(Suppl 3): e25293.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
8. von Elm E, Altman DG, Egger M, *et al.*: **The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies**.
[Reference Source](#)
9. **Partner and Family based Index case testing. A Standard Operating Procedure (SOP)**.
[Reference Source](#)
10. Plotkin M, Kahabuka C, Christensen A, *et al.*: **Outcomes and Experiences of Men and Women with Partner Notification for HIV Testing in Tanzania: Results from a Mixed Method Study**. *AIDS Behav*. 2018; **22**(1): 102–116.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
11. Gari S, Malungo JRS, Martin-Hilber A, *et al.*: **HIV testing and tolerance to gender based violence: a cross-sectional study in Zambia**. *PLoS One*. 2013; **8**(8): e71922.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
12. World Health Organization: **HIV status disclosure to sexual partners: rates, barriers, and outcomes for women**. Geneva; 2003.
[Reference Source](#)
13. Obermeyer CM, Osborn M: **The utilization of testing and counseling for HIV: a review of the social and behavioral evidence**. *Am J Public Health*. 2007; **97**(10): 1762–1774.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
14. Selvaraj K, Kumar AMV, Chawla S, *et al.*: **Are partners of HIV-infected people being tested for HIV? A mixed-methods research from Gujarat, India**. *Public Health Action*. 2017; **7**(1): 46–54.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
15. Skovdal M, Campbell C, Madanhire C, *et al.*: **Masculinity as a barrier to men's use of HIV services in Zimbabwe**. *Global Health*. 2011; **7**: 13.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
16. Obermeyer CM, Sankara A, Bastien V, *et al.*: **Gender and HIV testing in Burkina Faso: an exploratory study**. *Soc Sci Med*. 2009; **69**(6): 877–884.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
17. Brown LB, Miller WC, Kamanga G, *et al.*: **HIV partner notification is effective and feasible in sub-Saharan Africa: opportunities for HIV treatment and prevention**. *J Acquir Immune Defic Syndr*. 2011; **56**(5): 437–442.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
18. Katamba C: **"HIV INDEX TESTING SERVICES IN URBAN LUSAKA: a review of medical records"**. Harvard Dataverse, V1, UNF:6:gUfVE+tw9Om3xSJZ99B8Q == [fileUNF], 2020.
<http://www.doi.org/10.7910/DVN/QOQM3K>
19. Katamba C: **"Replication Data for: HIV index testing services in urban Lusaka: a review of medical records"**. Harvard Dataverse, V1, 2020.
<http://www.doi.org/10.7910/DVN/FSHCQ6>
20. Katamba C: **STROBE Checklist for HIV index testing services in urban Lusaka study**. Harvard Dataverse, V1. 2021.

Open Peer Review

Current Peer Review Status:

Version 2

Reviewer Report 23 February 2022

<https://doi.org/10.5256/f1000research.79223.r115749>

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Safe and ethical index testing remains one of the key strategies for improving HIV case finding particularly in low prevalence communities and countries. Therefore, the study is of significant public health importance.

The introduction is good.

The main outcome of interest is to review the success of index testing to improve HIV case finding across gender and the different age bands. This was not shown in table 3 as the cross-tabulation compared gender and testing and not HIV status as wrongly labeled on table 3. This should be corrected. There should be a table for sociodemographic characteristics e.g., age, marital status etc. There was no age disaggregation and no cross-tabulation to compare age band and HIV status. This should be done.

One of the inclusion criteria is having elicited at least one sexual partner, what of the index clients that accepted but did not elicit a contact, are we excluding them? If yes, include them in the exclusion list.

The exclusion criteria includes contacts listed as biological children of index clients. Why are we excluding this group? Are we changing the title to sexual contact of index clients? If it is contact of index clients, we need to include them.

For the tables, let us also have the percentages, you should not be quoting numbers on the tables with the narrative talking in percentages.

There is a need to bring back all the tables with merging of some tables together. The narrative for each table should be under each table.

Figure 1 did not talk of contact reached that refuse testing. Are there no contacts reached that refused to test?

There is a need to review the discussion and conclusion based on findings from the new cross-tabulations and the addition of biological children if the title is to be retained.

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Partly

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however we have significant reservations, as outlined above.

Reviewer Report 22 November 2021

<https://doi.org/10.5256/f1000research.79223.r100077>

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Soundarya Mahalingam

Department of Pediatrics, Kasturba Medical College and Hospital, Manipal Academy of Higher Education, Mangalore, Karnataka, India

The revised version has been reviewed. No further changes required. Accepted for indexing.

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Yes

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Medical Education, HIV and pediatric HIV, Pediatric Allergy

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 27 October 2021

<https://doi.org/10.5256/f1000research.29114.r95883>

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Taurayi A. Tafuma

Zimbabwe Health Interventions, Harare, Zimbabwe

This area of study is very important at this moment where it is difficult to identify HIV positive Clients who do not know their status. However, the author needs to do a lot of literature review so that, as per the aim of this study, they can make recommendations. At this moment, the aim of the study is not in line with the findings and the analysis done. I also recommend that the title be reviewed and be improved to be in line with the narrative.

Introduction and Method:

- This study did not have phases so delete term phase under-sampling.
- The study population is non-specific - when do we consider someone to be a man or woman vs a boy or a girl? Best to use age categories, as this study reached out to 16-year-olds who are girls and boys.
- Clarify the exclusion criteria used, especially non-consideration of PICT and VCT index cases.
- Review the sentence on Data sources "...the contacts' HIV test outcome (yield, ...)". Is yield an outcome or do you want HIV status? Please clarify.
- The variables tracked will not provide the best ways to improve index case testing. The approach is disjointed with what the study aim is like.

Results section:

- Being that we have a table with the results, the writer is expected to summarise the results in the narrative rather than repeat them as they are in the table.
- Generally, the author should rework this result section for a better presentation.
- Good paragraph on time spent from elicitation to HIV testing.
- The statistical powering is not clear and not sure if it is adding any value to the paper.

Discussion:

- The discussion is not elaborate enough.
- The writer also started discussing the test and start strategy - how linked is this to index case testing?
- There is no extrapolation on the findings, and this limits the assessment of these results.

Conclusion

- This is not supported by the results. Also, there seem to be no proposed ways to improve index case testing, and this could have been derived from the results. However, from the results provided so far, this paper is not in a position to provide ways to improve index case testing.

General:

- The writer needs to perform a detailed literature review for the introduction and discussion.
- There is so much literature on index case testing and this author should redo this paper

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

No

If applicable, is the statistical analysis and its interpretation appropriate?

No

Are all the source data underlying the results available to ensure full reproducibility?

Partly

Are the conclusions drawn adequately supported by the results?

No

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: HIV, MNCH, GBV, Health Emergencies

I confirm that I have read this submission and believe that I have an appropriate level of expertise to state that I do not consider it to be of an acceptable scientific standard, for reasons outlined above.

Reviewer Report 03 August 2021

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1. The article is a well thought out study and focuses upon the importance of contact tracing and testing in PLHIV.
2. The article needs to mention details of informed consent taken from the PLHIV while approaching their contacts for testing for HIV.
3. The study design, methods, and data collection is appropriate.

4. The details of sampling, sample size calculation, and the details of contact tracing in cases where the partners were not the only contacts needs to be elaborated upon.
5. Statistics needs to be detailed. Here the null hypothesis and the Chi square does not correlate with the aim of the study. Further statistics to assess the number of new cases identified by contact tracing and its statistical significance needs to be done.
6. Discussion needs to be rewritten. No recent references have been alluded to or compared with.
7. Conclusions mention 'HIV index testing services are an effective way for improved HIV case identification'. This statement needs to be proven appropriately with statistics.

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Yes

Are all the source data underlying the results available to ensure full reproducibility?

No

Are the conclusions drawn adequately supported by the results?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Medical Education, HIV and pediatric HIV, Pediatric Allergy

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however we have significant reservations, as outlined above.

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