PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	AIDS-Related Stigmatization in the Healthcare Setting: A Study of Primary Healthcare Centers that Provide Services for Prevention of Mother-to-Child Transmission of HIV in Lagos, Nigeria
AUTHORS	Ehiri, John; Alaofè, Halimatou; Yesufu, Victoria; Balogun, M; Iwelunmor, Juliet; Kram, Nidal; Lott, Breanne; Abosede, Olayinka

VERSION 1 - REVIEW

REVIEWER	Jo Durham Queensland university of Technology, Australia
REVIEW RETURNED	07-Oct-2018

GENERAL COMMENTS	Thank you for the opportunity to review this paper. The paper is generally well-written. Introduction Suggest in discussing HIV in Nigeria the authors include discussion of access to ART as access to ART and shifting perceptions of HIV/AIDs to a chronic condition may help reduce stigma, particularly in high-prevalence countries The authors could also briefly discuss policies related to HIV-Stigma in Nigeria and summarise current evidence of healthcare worker stigma in Nigeria and domains measured A clearer statement of how the research contributes to existing knowledge is also needed. Methods It is unclear how the LGAs, PHCs and participants were identified, please clarify Please comment on the fact that most participants were females and how this may have affected findings How many of the approached potential participants declined to participate? How was the questionnaire administered? Provide detail of the psychometric properties of the instrument and if these are basd on testing in Nigeria with a similar population to this study Please explain how the instrument was validated – it seems the pilot was only with 10 participants so what did the validation process entail? Was the instrument (re) validated in this sample using psychometric testing. If it was only piloted with 10 participants piloted with is more accurate than validated Findings are generally clear, can you clarify assumptions were tested before running the statistical analysis Discussion Please reference first sentence

	How did you check whether the facilities had [policies and procedures – this is not mentioned in the methods While you state better access to ART may reduce stigma, no evidence that there is better access to ART is provided in the introduction or discussion is provided Given workers noted they would be disciplined if discovered engaging in stigmatising practices is there a possibility of bias in the results especially as 30% of participants did not have access to adequate supplies to reduce risk of HIV infection Last paragraph pg. 21 'confirming' seems a bit strong as you have not demonstrated a causal relationship, suggest change to suggests Strengths of the study A lot is made of the instrument being validated but there is no evidence in the article that it was validated o psychometric tests were undertaken in this sample. Validity is complex and on-going, what kind of validity are you referring to? The last sentence of this study may be the case but does not seem to be strength of this study

REVIEWER	Karsten Lunze Boston Medical Center, Boston University, Boston, MA, USA
REVIEW RETURNED	02-Dec-2018

GENERAL COMMENTS	This is an important addition to the literature investigating responses to provider stigma related to HIV as a potential structural barrier to PMTCT in Nigeria. It is indeed important to recognize health care facilities as sources of stigma that prevent us from reaching zero HIV. The key findings are note-worthy: that self-reported stigma at PHC is relatively low and, importantly, that HIV training of PMTCT service providers at these PHC is associated with reduced risk perception of contracting HIV infection and fewer stigmatizing attitudes and opinions against PLWHA. The study design and approach seem appropriate, and overall, the paper is very well written and structured. I would have only a number of minor suggestions to improve the clarity of the paper for the BMJ Open's general readership. Given the topic, careful use of non-stigmatizing language seems as important as for any published article. The authors relate to stigma using varying terms, among them HIV/AIDS stigma. UNAIDS guidelines discourage the use of that term whenever possible as it can cause confusion; e.g., most people with HIV do not have AIDS (see http://www.unaids.org/sites/default/files/media_asset/2015_terminology_guidelines_en.pdf) As to the reference to "those at high risk of HIV/AIDS (intravenous drug users and homosexuals) as patients", guidelines (and affected people) prefer a "people first" language, e.g., people who use drugs. The study context is well described, but it would be important for the reader to understand staffing at the sampled facilities in more detail. The manuscript uses various stigma terms, including stigma and discrimination, stigmatization, AIDS stigmatization, and it might be helpful to define these terms beyond the initial two as in the current manuscript. It might also be helpful to give a background of how (and why) this study addresses (or not) explicit vs implicit bias.

	When the authors refer to “stigma and discrimination among PMTCT service providers”, it is unclear that “among” refers to both stigma originating from AND stigma affecting providers. Accordingly, the analysis, presentation of results and discussion could better conceptualize these two related but different forms of stigma. How is the “secondary stigmatization” (in the literature by Goffman and sometimes subsequently referred to as courtesy stigma) related to stigmatization and discrimination by providers? In its current form, the article categorizes it among “Healthcare workers’ discriminatory behaviors”, which does not seem accurate. Given the cross-sectional design, it seems the stated question “How do healthcare workers’ stigmatizing attitudes and their work environment influence their discriminatory intent at work toward PLWHA?” cannot be addressed, as influence assumes a causality that this design cannot explore. The analysis rather addresses the relation between environment and discriminatory intent. Remarkably, the opinions about PLWHA expressed by study participants were generally supportive. It would be helpful to attempt or at least discuss how the study could explore providers’ documented knowledge related to their actual practices. It would be helpful to guide the readership with this regard, e.g., when are universal precautions useful and justified, and when are they (or rather “discriminatory” precautions) indeed discriminatory practices. How can this study inform strategies to address professional resistance and fear among providers? Very minor criticism is in regard to some open questions that would be helpful to understand the study design and implementation: What was the timeframe for the stated “decrease in new infections and a 6% decrease in deaths”? Regarding the study sampling frame: how were PHC and LGAs chosen, was it merely convenience? Were participants offered any incentives? If only “health workers involved in direct patient care (nurses and nursing assistants) or who had access to information on clients’ HIV serostatus” eligible, then any explanation as to why TBAs were not sampled? It is very commendable that the researchers used a previously validated instrument. At the authors discretion and space allowing, it would be VERY interesting to many readers how in practice the instrument was validated and adapted for this study. The study found a substantial preference not to provide services to HIV key populations (almost a quarter) – what is the authors interpretation of that finding? Is there possibly any comparison of provider attitudes with the general population in DHS dataset? Remarkably, the authors succeed in explaining why notoriously common power outages can contribute to stigmatization. Likewise, it would seem warranted to attempt a discussion of a number of relevant challenges this study was able to identify, such as the still substantial number of providers reluctant to serve key populations. Table 5 needs explanation of “domains” header, as otherwise the Table is not self-explanatory. The conclusions are largely valid. It might strengthen the conclusions and recommendations if they more closely related to the study findings and challenges identified, such as the above mentioned professional resistance. Finally, there is quite some redundancy between results narrative and tables, should the authors wish to abbreviate their text. Overall, this study provides a valuable addition to the literature on HIV stigma in the healthcare sector, and the authors are to be commended for their rigorous approach to their study question.

REVIEWER	Subash Thapa University of Southern Denmark, Denmark
REVIEW RETURNED	17-Dec-2018

GENERAL COMMENTS	I find the area of research very interesting, and the manuscript is very well written. However, one of the most important issues of this study is that it is subject to several biases, and this concerns the main scientific or academic content of the manuscript. For instance, the study was conducted in a healthcare setting among health workers with different professional backgrounds, and the reported lower levels of attitudes and behaviors of healthcare workers may be subject to social desirability bias. The reported lower stigma rates could have been verified/confirmed by other parallel/sequential mixed-methods approaches (e.g. qualitative interviews with people living with HIV).

VERSION 1 – AUTHOR RESPONSE

REVIEWER #1

Comment #1: Introduction- Suggest in discussing HIV in Nigeria, the authors include discussion of access to ART as access to ART and shifting perceptions of HIV/AIDs to a chronic condition may help reduce stigma, particularly in high-prevalence countries.

Response: A comment and two additional citations were added to the discussion section to support this notion that stigma may decrease as access to ARTs increase. Data for access to ARTs among pregnant women in Nigeria was added to introduction section (last paragraph).

Comment #2: Introduction- Briefly discuss policies related to HIV-Stigma in Nigeria and summarize current evidence of healthcare worker stigma in Nigeria and domains measured.

Response: The introduction section has been revised with information that addressed this comment.

Comment #3: Introduction- A clearer statement of how the research contributes to existing knowledge is also needed

Response: Good point. We have clarified with the following statement in the introduction, “To date, we are aware of only one other study evaluating stigma and discrimination in PHCs in Nigeria (22); our study is the first in Lagos state, the only to have been conducted in the country since 2007, and it builds on previous findings by describing the work environment in addition to stigmatizing attitudes and discriminatory behaviors of health workers.” (last paragraph)

Comment #5: Methods- It is unclear how the LGAs, PHCs and participants were identified,

Response: This is an important observation by the reviewer. We have included a detailed description under “Research design, population and data collection” in the “Design and Methods” section.

Comment #6: Methods- Please comment on the fact that most participants were females and how this may have affected findings

Response: We have included a discussion of this finding in the discussion section. See paragraph just before the conclusion section.

Comment #7: Methods- How many of the approached potential participants declined to participate? How was the questionnaire administered?

Response: Our response to comment # 5 above addressed comment. Please the concluding paragraph of the section on “Research design, population and data collection” for details.

Comment #8: Methods- Provide detail of the psychometric properties of the instrument and if these are based on testing in Nigeria with a similar population to this study

Response: We have provided additional explanation and justification under the section on “Validity and reliability of instrument.” Furthermore, an expert consultation by USAID reviewed an item pool of existing measures, identified gaps and prioritized questions. The resulting instrument was field tested among different levels of health facility staff that works across diverse HIV prevalence, language and healthcare settings. Field tests analyzed both psychometric properties ($\alpha = 0.78$) and contextual issues (J Int AIDS Soc. 2013; 16(3Suppl 2): 18718). Significant resources were invested in field testing of this study instrument in several countries, including those with similar HIV prevalence levels as our study setting. The purpose of using a validated instrument is to avoid duplication efforts and resources on extensive validation of already validated instruments. Our small local pilot-testing to contextualize the instrument did not yield data that showed it would have yielded different psychometric properties from those observed in similar settings.

Comment #10: Methods- Clarify assumptions were tested before running the statistical analysis

Response: We have noted in the text, the fact that the following assumptions were accounted for prior to analyses: normality, linearity, absence of multicollinearity and homoscedasticity.

Comment #11: Reference first sentence in the discussion section.

Response: This sentence has been revised and appropriate citations have been included as follows: “Although AIDS-related stigmatization pose significant risk to the physical and psychosocial well-being of people living with HIV, our current understanding of the extent of the problem among healthcare providers working within primary healthcare centers in Nigeria is based on a few studies (23, 33)”

Comment #12: Methods- How did you check whether the facilities had [policies and procedures – this is not mentioned in the methods.

Response: We have clarified in the concluding paragraph of the section on “Data collection instrument” that a score of 1 was given for a ‘yes’ response if a policy document was provided/observed by the data collector and 0 for ‘no’ or ‘don't know’ if none was provided/observed by the data collector.

Comment #13: Discussion- While you state better access to ART may reduce stigma, no evidence that there is better access to ART is provided in the introduction or discussion is provided

Response: Two additional sources were added to support this claim in the discussion (paragraph 3). An additional statistic about pregnant women’s access to ARTs over time has been added to the introduction (last paragraph).

Comment #14: Discussion- Given workers noted they would be disciplined if discovered engaging in stigmatizing practices is there a possibility of bias in the results especially as 30% of participants did not have access to adequate supplies to reduce risk of HIV infection.

Response: There is certainly a possibility of social desirability bias. This is discussed in the limitations. An additional statement added to the limitation points out that while participants reported their own behaviors, they were also given a chance to report behaviors of other health workers which would

presumably be less prone to social desirability, and still the reported discrimination was low (limitations, paragraph 1).

Comment #15: Discussion- Last paragraph pg. 21 ‘confirming’ seems a bit strong as you have not demonstrated a causal relationship,

Response: Agreed. Confirming” has been replace by “suggesting”.

Comment #16: Regarding strengths of the study, a lot is made of the instrument being validated but there is no evidence in the article that it was validated o psychometric tests were undertaken in this sample. Validity is complex and on-going, what kind of validity are you referring to? The last sentence of this study may be the case but does not seem to be strength of this study

Response: Please see our response to comment # 8 above. In addition, we agree with the reviewer that the paper needs to tone down on the issue validity and reliability since this was not the intent or focus of the paper. We have responded further to this comment in our overall revision.

Reviewer #2

Comment #1: Suggest discussing HIV in Nigeria in the introduction section.

Response: HIV in Nigeria has now been discussed extensively in the introduction section.

Comment #1: Careful use of non-stigmatizing language seems as important as for any published article. The authors relate to stigma using varying terms, among them HIV/AIDS stigma. UNAIDS guidelines discourage the use of that term whenever possible as it can cause confusion; e.g., most people with HIV do not have AIDS (see http://www.unaids.org/sites/default/files/media_asset/2015_terminology_guidelines_en.pdf)

Response: This is a valid point, thank you for sharing the source. We have gone through the manuscript and changed the terminology to be the preferred terms per UNAIDS suggestions.

Comment #2: As to the reference to “those at high risk of HIV/AIDS (intravenous drug users and homosexuals) as patients”, guidelines (and affected people) prefer a “people first” language, e.g., people who use drugs.

Response: This is a valid point, we changed the language to people who inject drugs and people who engage in same-gender sexual behavior) in text and on table 3.

Comment #3: Methods- The study context is well described, but it would be important for the reader to understand staffing at the sampled facilities in more detail

Response: We thank the reviewer for this observation. We have included a detailed description as suggested. See the section on “Research design, population and data collection.”

Comment #4: The manuscript uses various stigma terms, including stigma and discrimination, stigmatization, AIDS stigmatization, and it might be helpful to define these terms beyond the initial two as in the current manuscript. It might also be helpful to give a background of how (and why) this study addresses (or not) explicit vs implicit bias.

Response: This is a great point. As you pointed out we have been using terms interchangeably, upon further consideration we feel the two provided definitions cover the breadth of our intended uses of the concepts associated with the discrimination experienced by people perceived to be living with

HIV. Changes have been made throughout the manuscript to only use the two defined terms “AIDS-related stigma” and “AIDS-related stigmatization.”

Comment #5: When the authors refer to “stigma and discrimination among PMTCT service providers”, it is unclear that “among” refers to both stigma originating from AND stigma affecting providers. Accordingly, the analysis, presentation of results and discussion could better conceptualize these two related but different forms of stigma. How is the “secondary stigmatization” (in the literature by Goffman and sometimes subsequently referred to as courtesy stigma) related to stigmatization and discrimination by providers? In its current form, the article categorizes it among “Healthcare workers’ discriminatory behaviors”, which does not seem accurate.

Response: This is an important observation. The instrument and study measured stigmatization by health workers, and not courtesy stigma or stigmatization “among” health workers. Accordingly, we have edited the manuscript for consistency. Stigmatization by health workers is now used consistently throughout the manuscript.

Comment #6: Given the cross-sectional design, it seems the stated question “How do healthcare workers’ stigmatizing attitudes and their work environment influence their discriminatory intent at work toward PLWHA?” cannot be addressed, as influence assumes a causality that this design cannot explore. The analysis rather addresses the relation between environment and discriminatory intent

Response: Upon further review of your concern, we agree the question cannot be addressed through the cross-sectional study design. We have revised our research question to only explore the relationship between the work environment, stigmatization, and discrimination.

Comment #7: Remarkably, the opinions about PLWHA expressed by study participants were generally supportive. It would be helpful to attempt or at least discuss how the study could explore providers’ documented knowledge related to their actual practices. It would be helpful to guide the readership with this regard, e.g., when are universal precautions useful and justified, and when are they (or rather “discriminatory” precautions) indeed discriminatory practices.

Response: We have included a new paragraph in response to this comment in the discussion section – see paragraph before “strengths of the study”.

Comment #9: How can this study inform strategies to address professional resistance and fear among providers?

Response: We have included a paragraph just before “strength of the study” in discussion section, where we provided a brief discussion of how the study can inform strategies to address professional resistance and fear.

Comment #10: Very minor criticism is regarding some open questions that would be helpful to understand the study design and implementation: What was the timeframe for the stated “decrease in new infections and a 6% decrease in deaths”?

Response: These details have now been included under the section on “Research design, population, and data collection”. The “decrease in new infections and a 6% decrease in deaths” was between 2010 and 2017. This has been clarified in the discussion section.

Comment #11: Methods- Regarding the study sampling frame: how were PHC and LGAs chosen, was it merely convenience? Were participants offered any incentives? If only “health workers involved in direct patient care (nurses and nursing assistants) or who had access to information on clients’ HIV serostatus” eligible, then any explanation as to why TBAs were not sampled?

Response: Detailed explanation of the above components has now been provided in the section on "Research design, study population and data collection" TBAs are currently not part of the HIV/AIDS care team in Nigeria. In fact, task shifting to the primary health care level is still very recent in the country.

Comment #12: Methods- It is very commendable that the researchers used a previously validated instrument. At the authors discretion and space allowing, it would be VERY interesting to many readers how in practice the instrument was validated and adapted for this study.

Response: Thank you for this comment. Please see our response to reviewer # 1, comment #8.

Comment #13: The study found a substantial preference not to provide services to HIV key populations (almost a quarter) – what is the authors interpretation of that finding? Is there possibly any comparison of provider attitudes with the general population in DHS dataset? Remarkably, the authors succeed in explaining why notoriously common power outages can contribute to stigmatization. Likewise, it would seem warranted to attempt a discussion of several relevant challenges this study was able to identify, such as the still substantial number of providers reluctant to serve key populations.

Response: This is an observation. We do currently do not information from Nigeria's DHS datasets to confirm this finding, but we agree that this would be an important research question to explore in a different study. For this paper, we have included a discussion on the finding related to reluctance to provide services to HIV key populations in the new paragraph within the discussion section (just above "strengths of the study").

Comment #14: Table 5 needs explanation of "domains" header, as otherwise the Table is not self-explanatory.

Response: We have provided a legend under Table 5 to explain the different domains.

Comment #15: It might strengthen the conclusions and recommendations if they more closely related to the study findings and challenges identified, such as the above mentioned professional resistance.

Response: This is an important observation by the reviewer. As noted earlier, we have included a paragraph just before "strength of the study" in discussion section, where we provided a brief discussion of how the study can inform strategies to address professional resistance and fear.

Comment #16: There is quite some redundancy between results narrative and tables, should the authors wish to abbreviate their text.

Response: The text of the results section has been revised in response to this comment.

Reviewer #3

Comment #1: I find the area of research very interesting, and the manuscript is very well written. However, one of the most important issues of this study is that it is subject to several biases. For instance, the study was conducted in a healthcare setting among health workers with different professional backgrounds, and the reported lower levels of attitudes and behaviors of healthcare workers may be subject to social desirability bias. The reported lower stigma rates could have been verified/confirmed by other parallel/sequential mixed-methods approaches (e.g. qualitative interviews with people living with HIV).

Response: Thank you for your comments. Yes, a mixed-method approach that engaged with additional participants such as people living with HIV would certainly add robustness to the findings.

We did conduct focus group discussions in coordination with this research, but again among health care providers, and hope to present those findings elsewhere as we feel we need more space to adequately share the rich data collected. We have addressed the limitation of social desirability bias and have added a statement recommending additional methodologies that may verify/confirm our findings in the future (limitations, paragraph 1). Even in the absence of patient perspectives or third-party observation of the self-reported behaviors of the providers, we feel that the findings presented herein will be useful for the development of provider training that are responsive to the provider-identified proficiencies and deficits.