

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

This paper was submitted to a another journal from BMJ but declined for publication following peer review. The authors addressed the reviewers' comments and submitted the revised paper to BMJ Open. The paper was subsequently accepted for publication at BMJ Open.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Exploring Challenges and Recommendations for Verbal Autopsy Implementation in Low-and Middle-Income Countries: A Cross-Sectional Study of Iringa Region - Tanzania
AUTHORS	Tunga, Mahadia; Lungo, Juma; Chambua, James; Kateule, Ruthbetha; Lyatuu, Isaac

VERSION 1 – REVIEW

REVIEWER	Flaxman, Abraham University of Washington
REVIEW RETURNED	19-Jul-2023

GENERAL COMMENTS	<p>This paper used key informant interviews and thematic coding to identify perceived barriers to wide-spread use of verbal autopsy in the Iringa region of Tanzania, as well as suggested recommendations to overcome these barriers. I think this is important information, and will be quite suitable for a journal like BMJ Open, after the authors substantially revise the paper to make it clear that these barriers and recommendations are all based on the perceptions and suggestions of their key informants.</p> <p>Major comment one:</p> <p>In the abstract and throughout the paper, I would like the authors to make it clear that the study finds **perceived** barriers, and that these are perceived by the key informants. Similarly for the recommendations, these are recommendations that the key informants provided (grouped thematically by the paper's authors). This is important because the perceived barriers all seems logical and the recommendations to overcome them all make sense, but at the end of the introduction, as a reader I was left wondering what evidence the authors might possibly muster to prove a claim such as "the legal CRVS framework has to be instituted at the design stage". If I am right in my understanding that this is a common theme from the key informants, then I would like the authors to revise the abstract and the paper to make this more clear for future readers.</p> <p>This applies also to the Summary section --- make sure that all the claims about what is known and what this study adds distinguish</p>
-------------------------	---

	<p>what is perceived by key informants and what is corroborated by other evidence, such as quantitative measurements.</p> <p>Major comment two:</p> <p>It is important to fit the discussion more closely with the results, and once you have been clear about what is a perceived barrier, I would like you to also revisit the discussion and conclusion to make sure you are not overstating what your findings imply.</p> <p>Minor comments:</p> <p>Abstract, page 3, line 28: for me, the word “indefensible” carries the opposite meaning of what I think the authors intend, so I suggest rephrasing.</p> <p>Introduction, page 5, lines 12-33: this is a great history of VA project in TZ. I was left wondering especially about the gaps in funding between these efforts, and how that might have affected progress. Perhaps you could include a figure showing this timeline, to make sure that you draw it to the attention of future readers.</p> <p>Page 6, line 20: for me, the word “skimmed” does not do justice to your work, and I suggest you say “collected” or something more formal.</p> <p>Page 6, line 25: you say you reviewed 12 documents, but I count only eight citations; consider including a table of these documents with some notes about each as supplementary material.</p> <p>Page 6, line 35: what seeding strategy did you use to start your snowball sampling? How did you proceed, precisely? This method can produce bias, so I would like to know more of the details.</p> <p>Page 6, line 35: I would also like to know more about which CHWs you excluded; I presume you were only looking for people with some familiarity with the VA process. Did you include people who had not conducted VA interviews? Are there non-CHWs who might have important perspectives who were excluded? Please say more about who was selected and why the reader can rest assured that this provides a comprehensive picture of how the VA implementation has gone in Iringa.</p> <p>Page 7, line 28: where members of the National Mortality and CoD Taskforce also included in the 41 KI interviewees? I would like to know more about how this consultation contributed to your results.</p> <p>Page 7, line 36: the respondents who were caretakers of the deceased must have been respondents to the verbal autopsy interviews, not to your key informant interviews, right? Please edit to make this clearer.</p> <p>Page 8 and forward: consider including anonymized quotes from a key informant to emphasize some or all of the eight themes. I love it when qualitative papers present some of the themes in the words of the study subjects.</p>
--	--

	<p>Page 9, line 42: I believe that “currier” is not the term you intend here; on page 10, line 42 you say “couriers” which is probably the term that you should use everywhere.</p> <p>Page 10, line 43: there seems to be some words missing in the phrase “engage timely with the VA results”</p> <p>Page 11, line 5: what does WEO stand for? Were supervisors included in your KI sampling strategy?</p> <p>Page 11, line 41-42: I’m not sure how important getting the precise area of the deceased is to interpreting the signs and symptoms, although I have not read ref [3], it is possible that my theory of this is out of date.</p> <p>Page 15, figure 1: I would like you to consider how you can modify the visual elements of this figure to make it clearer what the links are between the steps and the challenges/strategies. Currently I find it a bit overwhelming.</p>
--	---

REVIEWER	Keenan, Jeremy University of California, San Francisco, F.I. Proctor Foundation
REVIEW RETURNED	20-Jul-2023

GENERAL COMMENTS	<p>Page numbering refers to the top right</p> <p>This is a qualitative research paper that incorporated data from (i) literature review, (ii) key informant interviews, and (iii) observation of verbal autopsies in the field in order to provide a synthesis of the current processes for administering verbal autopsy in Tanzania as well as challenges and strategies that could enhance their usefulness. One overarching comment: the key informant interviews included two main groups of people: community health workers and people from the National Mortality and CoD Task Force. And the observations came not from any interviews but from the authors themselves. On one hand I appreciate that the authors have synthesized all data sources into an easy-to-read whole. But on the other hand, it would have been nice to have gotten a sense of which sources of data contributed to which conclusions/findings. I imagine the community health workers and Task Force members would have different incentives/priorities/backgrounds etc. and might look at things differently. And I imagine the observations may have led to some unique observations or confirmed some information elicited from the interviews. Is it the case that certain thematic groupings were primarily contributed by a certain source of data? If so it might be nice to indicate which sources of data contributed the most to each summarized group of findings. Other smaller comments are listed below:</p> <p>P8, line 43: this sentence is confusing (starting with “On the other hand”)</p> <p>P8, line 47: presumably “duration” refers to the duration the person had lived in the community before dying, but this could be clarified</p> <p>P9, line 40: did the authors uncover any reasons for the delay in feedback of VA results? Is there a delay in doing the actual analysis (eg, because of insufficient analyst or biostatistical support) or is the analysis done in a timely manner but the results</p>
-------------------------	---

	<p>simply not disseminated. Fixing this challenge would require knowing where the breakdown is happening.</p> <p>P10, line 44: last sentence starting with “Generally...”: is this referring to the current state of affairs? There are recommendations earlier in the paragraph but this final sentence does not seem to be a recommendation. If it is a description of the current state of affairs it seems like it should be placed as one of the first sentences of the paragraph</p> <p>P10, line 51: “short VA questionnaire”: it is not surprising that a field worker would prefer a shorter questionnaire. But a field worker preference does not make it better. Is there data to support the theory that a short VA questionnaire provides the same amount of information as a longer form? We might not want to recommend a short form VA unless it has been shown to be as good as a longer questionnaire.</p> <p>P11, line 4: sentence starting with “The MoH has tasked...”: it is not clear if the authors think this strategy is sufficient or needs to be expanded or changed.</p> <p>P11, line 21: consider “highlights” not “highlighted”</p> <p>P11, line 21: this first sentence does not make sense to me in terms of its syntax. But also, this is the first mention of 4 stages of VA implementation? I wasn’t sure what was meant by the 4 stages. I think maybe the authors are saying here that they have grouped their findings into 4 stages (ie, weak death notification system, length of VA interview, quality of data analysis, and data use and dissemination listed in this paragraph). Is that right? Is this a grouping the authors have invented from their synthesis or has it been published before? Please be more clear about what these stages are. And the sentence itself could be more clear to set up the 4 stages.</p> <p>Figure 1: Consider somehow making it more clear what the 4 stages are in the figure. Would color or shading make this easier to show? I also wonder if the organization of the figure could be clearer. Why not have the 4 stages at the top, with the challenges below that, and then proposed strategies below that. As configured the reader has to do a lot of mental work to figure out what is trying to be depicted. I think the figure could be a lot simpler as a type of grid format. Also I appreciate the type of legend in the upper right corner but I might add some descriptions to the figure legend and lead the reader through the figure a little bit.</p> <p>P11, line 22: “Conducting VA interviews”: if this sentence is based off a single study I would specifically state that.</p> <p>Did the authors obtain ethical approval for this study? It is human subjects research.</p> <p>Please add a paragraph or few sentences on the limitations of the present study.</p>
--	---

VERSION 1 – AUTHOR RESPONSE

1st Reviewer			
1.	In the abstract and throughout the paper, I would like the authors to make it clear that the study finds **perceived** barriers, and that these are perceived by the key informants. Similarly for the recommendations, these are recommendations that the key informants provided (grouped thematically by the paper's authors).	This is well noted. The authors agree with you and have revised accordingly. "The perspectives from the semi-structured interviews indicated that there exists a weak death notification system, lengthy VA questionnaire, poor data quality and inconsistent responses, poor coordination, poor financial mechanism, and lack of feedback loop. The community health workers, national mortality and cause of death task force and researchers through documents review, highlighted the following strategies for effective adaptation and use of VAs: Reinforce or implement legislative procedures towards the legal requirement for death notification, ..."	75,245,324,457
2.	This applies also to the Summary section --- make sure that all the claims about what is known and what this study adds distinguish what is perceived by key informants and what is corroborated by other evidence, such as quantitative measurements.	The summary section has been removed as it is not part of BMJ Open as suggested by the Editor.	N/A
3.	It is important to fit the discussion more closely with the results, and once you have been clear about what is a perceived barrier, I would like you to also revisit the discussion and conclusion to make sure you are not overstating what your findings imply.	The entire discussion section has been revised.	440-488
4.	Abstract, page 3, line 28: for me, the word "indefensible" carries the opposite meaning of what I think the authors intend, so I suggest rephrasing.	The word indefensible has been replaced by the term "Challenging"	122
5.	Introduction, page 5, lines 12-33: this is a great history of VA project in TZ. I was left wondering especially about the gaps in funding between these efforts, and how that might have affected progress. Perhaps you could include a figure showing this timeline, to make sure that you draw it to the attention of future readers.	We have revised the manuscript to include a graphical display (Figure 1 has been attached as a separate document) to visualize different implementation of VA in Tanzania.	124

6.	Page 6, line 20: for me, the word “skimmed” does not do justice to your work, and I suggest you say “collected” or something more formal.	The word “skimmed” was substituted with “extracted”.	171
7.	Page 6, line 25: you say you reviewed 12 documents, but I count only eight citations; consider including a table of these documents with some notes about each as supplementary material.	The 12 documents have been indicated. The documents included, (a) Vital Statistics Reports (b) CRVS Fellowship report: A national scale-up strategy for Tanzania (c) VA Questionnaires for Tanzania and WHO VA Data Collection tool of 2016 (d) Sample Vital Registration with VA (SAVVY) report [22] (e) WHO CRVS strategic implementation plan 2021-2025 (f) Published articles related to the VA implementation projects in Tanzania [16] and other LMICs including India [23], Ethiopia [24], Sierra Leone [25], Uganda [26], Zambia [27], and Brazil [5].	227-233
8.	Page 6, line 35: what seeding strategy did you use to start your snowball sampling? How did you proceed, precisely? This method can produce bias, so I would like to know more of the details.	<p>The entire section has been revised accordingly.</p> <p>The snowball sampling started with the National Mortality and CoD Task Force which involved 5 members, who recommended the next participant to be the VA regional supervisor (1), thereafter the community health workers (33) were also recommended to be included. The 33 CHW were randomly selected according to the wards which were categorized as urban, peri-urban and rural. The semi-structured interviews also included the VA national coordinator and one member of the VA data management team.</p> <p>To avoid sampling bias, we adhered to the criterion that only CHW with one or more VA interviews were selected and also the selection was random.</p>	176-182
9.	Page 6, line 35: I would also like to know more about which CHWs you excluded; I presume you were only looking for people with some familiarity with the VA process. Did you include people who had not conducted VA interviews? Are there non-CHWs who might have important perspectives who were excluded? Please say more about who was selected and why the reader can rest assured that this	We excluded CHW who did not conduct any VA, or had a very minimal number of VA (less than 5). We also excluded CHW who were not available for interviews. Our analysis was based on acquired experience from implementing VA data collection activity. Therefore, having collected a certain number of VA was an important criterion. We believe that people who participated in data collection had a great share of experience to communicate.	218-225

	provides a comprehensive picture of how the VA implementation has gone in Iringa.		
10.	Page 7, line 28: where members of the National Mortality and CoD Taskforce also included in the 41 KI interviewees? I would like to know more about how this consultation contributed to your results.	The paragraph has been reviewed to include the breakdown of the 41 KI.	218-225
11.	Page 7, line 36: the respondents who were caretakers of the deceased must have been respondents to the verbal autopsy interviews, not to your key informant interviews, right? Please edit to make this clearer.	Yes, it true. The entire paragraph has been revised.	284-286
12.	Page 8 and forward: consider including anonymous quotes from a key informant to emphasize some or all of the eight themes. I love it when qualitative papers present some of the themes in the words of the study subjects.	Quotations have been included.	269-271,283-284,299-300,314-317,328-329,366-367
13.	Page 9, line 42: I believe that “currier” is not the term you intend here; on page 10, line 42 you say “couriers” which is probably the term that you should use everywhere.	Revised to “couriers”.	415, 465,471
14.	Page 10, line 43: there seems to be some words missing in the phrase “engage timely with the VA results”	Revised to “The CHWs should be able to promptly access the VA results and incorporate insights into their healthcare interventions.”	415 - 416
15.	Page 11, line 5: what does WEO stand for? Were supervisors included in your KI sampling strategy?	The paragraph is revised. The long form for WEO has been added (Ward Executive Officer). A sentence has been added to indicate the regional supervisor was part of the KI.	324
16.	Page 11, line 41-42: I’m not sure how important getting the precise area of the deceased is to interpreting the signs and symptoms, although I have not read ref [3], it is possible that my theory of this is out of date.	The entire discussion section has been revised, the said paragraph has been deleted.	N/A
17.	Page 15, figure 1: I would like you to consider how you can modify the visual elements of this figure to make it clearer what the links are between the steps and	The figure has been transformed into a tabular format (see Table 1) to improve readability.	239

	the challenges/strategies. Currently I find it a bit overwhelming.		
2nd Reviewer			
1.	<p>This is a qualitative research paper that incorporated data from (i) literature review, (ii) key informant interviews, and (iii) observation of verbal autopsies in the field in order to provide a synthesis of the current processes for administering verbal autopsy in Tanzania as well as challenges and strategies that could enhance their usefulness. One overarching comment: the key informant interviews included two main groups of people: community health workers and people from the National Mortality and CoD Task Force. And the observations came not from any interviews but from the authors themselves. On one hand I appreciate that the authors have synthesized all data sources into an easy-to-read whole. But on the other hand, it would have been nice to have gotten a sense of which sources of data contributed to which conclusions/findings. I imagine the community health workers and Task Force members would have different incentives/priorities/backgrounds etc. and might look at things differently. And I imagine the observations may have led to some unique observations or confirmed some information elicited from the interviews. Is it the case that certain thematic groupings were primarily contributed by a certain source of data? If so it might be nice to indicate which sources of data contributed the most to each summarized group of findings.</p>	<p>The authors agree and have revised the paper accordingly.</p> <p>From the semi-structured interviews, the implementation challenges as perceived by CHW included a weak death notification system, lengthy VA questionnaire, lack of clarity in the inclusion criteria, and no or delayed feedback to VA implementers. On the other hand, the perspective from the task force members includes poor data quality and inconsistent responses, poor commitment to roles and responsibilities, and poor financing mechanism while from the document review researchers concluded that there is poor coordination in VA implementation. Both CHW and task force members pointed out that the weak death notification system and lack of that inclusion criteria are among the VA implementation challenges. The following section provides a description of the challenges.</p>	247-441
2.	P8, line 43: this sentence is confusing (starting with "On the other hand")	The sentence has been revised to improve clarity. This paragraph intended to share that VA interviewers did not have clarity on who is to include or not include in the VA implementation. In most cases, they were leaning towards total inclusion to promote coverage/quantity of VA.	306-314
3.	P8, line 47: presumably "duration" refers to the duration the person had lived in	Revised to "In addition, different VA interviews provided contradicting	312-314

	the community before dying, but this could be clarified.	information about the duration a person must reside in a specific location before their death to be considered a resident".	
4.	P9, line 40: did the authors uncover any reasons for the delay in feedback of VA results? Is there a delay in doing the actual analysis (eg, because of insufficient analyst or biostatistical support) or is the analysis done in a timely manner but the results simply not disseminated. Fixing this challenge would require knowing where the breakdown is happening.	Indeed, similar to many programs at national levels or with global interest, little attention and resources are often put to disseminate results to local or to the ground where the data originate. Much of the focus and resources is narrowed directed to influencing policies at ministry or government level. It appears much easier logistically and financially to have one dissemination at the ministry level versus multiple disseminations at regions, councils or ward levels. In addition, the language starts to differ as you move down to different levels, and therefore this requires a different packaging or communication strategy.	359-366
5.	P10, line 44: last sentence starting with "Generally...": is this referring to the current state of affairs? There are recommendations earlier in the paragraph but this final sentence does not seem to be a recommendation. If it is a description of the current state of affairs it seems like it should be placed as one of the first sentences of the paragraph	The sentence has been deleted as it did not fit in the paragraph.	N/A
6.	P10, line 51: "short VA questionnaire": it is not surprising that a field worker would prefer a shorter questionnaire. But a field worker preference does not make it better. Is there data to support the theory that a short VA questionnaire provides the same amount of information as a longer form? We might not want to recommend a short form VA unless it has been shown to be as good as a longer questionnaire.	The study by [34] reported that the length of a VA questionnaire was shortened by almost 50% without a significant drop in the performance of CoD computation	488 - 490
7.	P11, line 4: sentence starting with "The MoH has tasked...": it is not clear if the authors think this strategy is sufficient or needs to be expanded or changed.	The entire paragraph has been revised to improve clarity and the overall interpretation.	275-283
8.	P11, line 21: consider "highlights" not "highlighted"	The entire paragraph has been revised.	248 -253
9.	P11, line 21: this first sentence does not make sense to me in terms of its syntax. But also, this is the first mention of 4	The entire section has been revised to improve clarity and the overall interpretation.	248 -253

	<p>stages of VA implementation? I wasn't sure what was meant by the 4 stages. I think maybe the authors are saying here that they have grouped their findings into 4 stages (ie, weak death notification system, length of VA interview, quality of data analysis, and data use and dissemination listed in this paragraph). Is that right? Is this a grouping the authors have invented from their synthesis or has it been published before? Please be more clear about what these stages are. And the sentence itself could be more clear to set up the 4 stages.</p>		
10.	<p>Figure 1: Consider somehow making it more clear what the 4 stages are in the figure. Would color or shading make this easier to show? I also wonder if the organization of the figure could be clearer. Why not have the 4 stages at the top, with the challenges below that, and then proposed strategies below that. As configured the reader has to do a lot of mental work to figure out what is trying to be depicted. I think the figure could be a lot simpler as a type of grid format. Also I appreciate the type of legend in the upper right corner but I might add some descriptions to the figure legend and lead the reader through the figure a little bit.</p>	<p>The figure has been transformed into a tabular format for improved readability.</p>	239
11.	<p>P11, line 22: "Conducting VA interviews": if this sentence is based off a single study I would specifically state that.</p>	<p>The entire discussion section has been revised, the said paragraph has been deleted.</p>	N/A
12.	<p>Did the authors obtain ethical approval for this study? It is human subjects research.</p>	<p>Formal ethical approval was granted by the Tanzanian Ministry of Health and National Medical Research Institute (NIMR). All participants gave informed consent prior to taking part in the study.</p>	518-520
13.	<p>Please add a paragraph or few sentences on the limitations of the present study.</p>	<p>Revised Accordingly. The limitation has been added "these findings may be influenced by interviewees biases. Also due to the limited peer-reviewed publications on the implementation of VA in real-world settings, we have incorporated grey literature into our document review to enhance its breadth. However, this grey literature may exhibit</p>	451 - 454

		varying levels of consistency and be accessible online only temporarily"	
--	--	--	--

VERSION 2 – REVIEW

REVIEWER	Flaxman, Abraham University of Washington
REVIEW RETURNED	20-Oct-2023

GENERAL COMMENTS	This revision has addressed all of my questions and suggestions. I see that there is a duplicated reference in the bibliography now, and I urge the authors to give a careful final review to the papers they have cited to remove that duplicate and make sure everything else is how they intended it.
-------------------------	--

REVIEWER	Keenan, Jeremy University of California, San Francisco, F.I. Proctor Foundation
REVIEW RETURNED	14-Oct-2023

GENERAL COMMENTS	The authors have addressed my concerns. My only very minor comment is that I would provide the source of the quote in Line 366.
-------------------------	---

VERSION 2 – AUTHOR RESPONSE

1 st Reviewer			
1.	This revision has addressed all my questions and suggestions. I see that there is a duplicated reference in the bibliography now, and I urge the authors to give a careful final review to the papers they have cited to remove that duplicate and make sure everything else is how they intended it.	The reference numbers 35 and 33 were mistakenly duplicated and have been subsequently removed.	520 - 628
2 nd Reviewer			
1.	The authors have addressed my concerns. My only very minor comment is that I	The source for the quotation has been added.	359 - 360

	would provide the source of the quote in Line 366.		
--	--	--	--