

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Improving pathways to care through interventions co-created with communities: a qualitative investigation of mens' barriers to tuberculosis care-seeking in an informal settlement in Blantyre, Malawi
AUTHORS	Phiri, Mackwellings; Makepeace, Effie; Nyali, Margaret; Kumwenda, Moses; Corbett, Liz; Fielding, Katherine; Choko, Augustine; MacPherson, Peter; MacPherson, Eleanor

VERSION 1 – REVIEW

REVIEWER	Grobusch, Martin Amsterdam University Medical Centres, Center of Tropical Medicine and Travel Medicine, Department of Infectious Diseases
REVIEW RETURNED	31-Oct-2020

GENERAL COMMENTS	<p>Phiri and colleagues apply qualitative methods to examine the important question of barriers to tuberculosis care-seeking in Blantyre, Malawi.</p> <p>The paper is well-written and informative; in general (a minor point) however, page numbers would have been useful; typography and grammar require revision; e.g. in the Abstract:</p> <p>Methods - '...men and women to explore barriers [not barrier] to care seeking'; '...team used a thematic content to analyse [not: analytics] the data'</p> <p>Conclusion - 'Improving mens' [not: men's] pathways to care requires [not:require]' etc.</p> <p>Results: Precarious socioeconomic conditions section - 'Men argued that insufficient household income constrained their agency' - do you mean 'urgency?' - otherwise not clear to me what is meant.</p> <p>Sentence below should read '...pressure to pay rent was often a further reason of tension.'</p> <p>Potential interventions summary - this is important as it summarises potential lessons learnt and points out possible improvements. I propose to present/summarise those points in a simple table or figure.</p> <p>Discussion:</p> <p>If I see it correctly, no potential study limitations are mentioned. The discussion is short regarding the consideration of the existing literature, and this deserves more in-depth appreciation and comparison with other groups' findings from different areas. Impossible to appreciate or summarise the 200 hits on PubMed on 'tuberculosis care-seeking', but some aspects should be</p>
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	highlighted; as an example, Cremers et al Soc Sci Med 2018 and/or Cremers et al BMC Public Health 2016 might be of interest (or other papers which applied similar methodology than the one applied here by Phiri and colleagues).
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REVIEWER	Skinner, Donald Human Sciences Research Council, Faculty of Health Sciences
REVIEW RETURNED	08-Nov-2020

GENERAL COMMENTS	<p>Identification of barriers to tuberculosis care-seeking and co-creation of interventions to improve diagnosis with communities in an informal settlement in Blantyre, Malawi bmjopen-2020-044944</p> <p>Overall comments: This paper should definitely be published as it uses excellent methods and has important findings that could impact on care across sub-Saharan Africa. However, there are a numbers of gaps in the paper that need to be filled first. Generally the paper was well written, with only a few grammatical errors.</p> <p>Abstract What were the participatory workshops?</p> <p>There is repetition in the results, the authors should rather use the space to expand their explanation.: precarious socioeconomic conditions; gendered social norms; and the role of the health system. Insecurity of day labour with no provision for sick leave; pressure to provide for the household and a gendered desire not to appear weak and a severely under-resourced health system all contributed to men delaying care in this context</p> <p>Introduction Some of the argument is a little clumsy, but the key points are there and the narrative is correct. Gender is crucial to the argument for this paper. I would like to see this developed a little further with particular relevance to Malawi.</p> <p>Methods I am very impressed with the overall methodological approach. It shows great sensitivity to context and is a huge advance over many existing approaches.</p> <p>Context Malawi has a particular history and context on gender that has committed to legislation a number of discriminatory practices that separate out power relations and roles. These should be raised.</p> <p>Data Collection More detail is required on both the interviews and the participatory workshops. The level of information required should be sufficient for the reader to really understand and if necessary get close to being able to replicated the process. In particular the participatory workshops, as a less standardized approach, need a lot more descriptive detail.</p> <p>Reflexivity and the researchers comments on impact of themselves on the research need to be added.</p> <p>Results</p>
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	<p>The sample for the PW is not adequately described. The authors need to describe the workshops in more detail; time spent in them and level of participation for example.</p> <p>Pg 15 ln34 – 36 not sure what this sentence is saying. In ability physically carry on particularly to go to work prompted seek care.</p> <p>Gendered social norms Religious restrictions as important point, but not really gender. Need a new heading.</p> <p>Pg 14 Talk of body sculptures in the results, but this is not described in the methods. Please add to methodology. Ln 47 presume “buy” should be “but”</p> <p>Pg 15 The quote states it is female respondent, but the text of the quote implies a male respondent. Please check.</p> <p>Discussion This presented an excellent summary of the results. I would like to see some deeper analysis and some reflection on references and theory relating to adherence, and the issues of socio-economic conditions, gender and power. Power does seem to be an absent theme in the paper. There are differentials of power based on gender, economic wealth, professional status and links to state power.</p> <p>Key sections like conclusion, study limitations and suggested future work need to be added.</p>
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REVIEWER	Probandari, Ari Universitas Sebelas Maret, Department of Public Health, Faculty of Medicine
REVIEW RETURNED	15-Nov-2020

GENERAL COMMENTS	<p>Bmjopen-2020-044944 Identification of barriers to tuberculosis care-seeking and co-creation of interventions to improve diagnosis with communities in an informal settlement in Blantyre, Malawi</p> <p>General comment The manuscript highlights relevant issues related to tuberculosis control in low- and middle-income countries.</p> <p>Major revisions</p> <ol style="list-style-type: none"> 1. Abstract-Methods: The authors wrote, “the team used a thematic content analysis to analysis the data.” (page 3, line 31). Please clarify: was it a content analysis or a thematic analysis? It is because the two analyses are different. Please also check the text about the data analysis in the main manuscript. 2. Abstract-Conclusion: The statement of the conclusion should include the answer of the research questions. Please re-write the conclusion incoherent with the study aim. 3. Methods: Who did the interviews and facilitators of the workshop? How did the researcher build rapport with participants? <ol style="list-style-type: none"> 1. Methods: The authors wrote, “Not all participants were available, so we used snowballing techniques...” (page 8, line 14).
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	<p>How many participants were not available when the researchers contacted them? Please elaborate on their characteristics.</p> <p>4. Methods: Did the authors ensure data saturation? Please elaborate.</p> <p>5. Methods: Please include a table that contains examples of the coding procedures. The table includes the example of questions, meaning units and codes/categories/themes</p> <p>6. Methods: What techniques the authors did to improve the trustworthiness of the study?</p> <p>7. Methods: Was there a specific technique of data collection during the participatory workshop that the authors apply?</p> <p>8. Methods: The authors should include a description of reflexivity and subjectivity in the methods.</p> <p>9. Results: Please make the readers know that the quotations were originated from various individuals. In this current version, the readers only know that the quotations are from female/male participant and PW/IDI.</p> <p>10. Results: Can the authors develop a diagram that can synthesis the results from the IDI and PW? I think that diagram will help the readers to understand the findings easier.</p> <p>11. Results: The authors should explore the different patterns among different characteristics of age, education, and occupation. If there are no different patters, then the authors</p> <p>12. Discussion: What are the implications of the findings, particularly for TB control in the country?</p> <p>13. Discussion: What are the limitations of the study?</p>
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REVIEWER	Chiang, Silvia Brown University, Pediatrics
REVIEW RETURNED	07-Dec-2020

GENERAL COMMENTS	<p>Thank you for this very interesting manuscript! This study uses in-depth interviews with 30 participants and participatory workshops with 23 participants to explore barriers to for seeking care for TB symptoms among men in Blantyre, Malawi. The study also aimed to identify interventions to address these barriers. The authors used thematic content analysis for the findings and reported three factors that shaped men’s care-seeking behavior: precarious socioeconomic conditions, gendered social norms, and the role of the health system. This study addresses an important issue and does so using an innovative approach. Below please find my suggestions for strengthening the manuscript:</p> <p>1. ABSTRACT: In the manuscript, the authors state that the aim of the study is “to understand barriers and develop interventions to improve pathways to diagnosis and care of TB for men” (page 7, lines 29-30). To improve clarity, the abstract should also specify that this is the aim (page 3, lines 12-14). I further suggest that the title should allude to the focus on barriers faced by men.</p> <p>2. ABSTRACT and RESULTS: One of the factors shaping men’s care-seeking behavior is referred to as “the role of the health system.” I would suggest being more specific—something like “dissatisfaction with the health system” or “suboptimal health services.”</p> <p>3. METHODS: There are important details of the methodology that have not been mentioned. For instance, did the authors decide on the number of IDIs a priori or recruit to the point of thematic saturation? Did all the male partners of the recruited women</p>
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	<p>participate? Were the interviews structured, semi-structured? How long, on average, did IDIs and PWs last? Could the authors provide the IDI and PW guides as supplementary materials? I suggest the authors refer to the COREQ guidelines to make sure all relevant information is included (Tong et al. Int J Qual Health Care, 2007).</p> <p>4. METHODS/RESULTS: Since the aim of the paper is to identify barriers to seeking care for TB, did the interviewers ask about the participants' knowledge of TB, and that cough >2 weeks could be a symptom of TB?</p> <p>5. RESULTS: In the section on interventions, the authors mention reliance on faith healing and traditional medicine as a barrier to seeking the "right" care (page 17, lines 14-16). However, this barrier isn't mentioned before, so this section (page 17, lines 14-50) seems to come out of nowhere. Is this barrier substantial enough to be the focus of its own section of the results? If not, does it merit so much emphasis in the interventions section? Also, the authors do not elaborate on "drawing on local leadership to encourage men to seek care," which was mentioned as one of the suggestions from participants (page 16, lines 22-25). Could the authors elaborate on this suggestion, since it seems to address the barrier of gendered social norms, especially since it's mentioned again in the discussion section (page 19, 48-52)?</p> <p>6. DISCUSSION: I think this section is the weakest of an otherwise very interesting paper. Much of this section simply summarizes the results (for e.g. page 19, lines 15-36). It would be much more interesting to discuss the implications of these results here (for e.g. page 20, lines 27-42). The authors could compare their findings to those from other settings (as they do on page 20, lines 27-42), discuss whether the interventions suggested by the study participants have been successful in other settings, etc. Another idea would be to tie in the findings of the results to the theoretical framing of the paper (page 6, lines 27-31). Please also include a limitations section.</p> <p>7. TABLE 1: The age variable would be more informative if the authors could give the median and IQRs. Also, could the authors provide the percentages in addition to the numbers in each category?</p> <p>8. REFERENCES: Please cite the most updated Global Tuberculosis Report 2020.</p> <p>9. There are some grammatical errors that will need to be addressed in editing. Also, on page 16, line 13, I think "partner" is supposed to be "participant."</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer 1: Prof. Martin Grobusch, Amsterdam University Medical Centres

Comments to the Author:

Phiri and colleagues apply qualitative methods to examine the important question of barriers to tuberculosis care-seeking in Blantyre, Malawi. The paper is well-written and informative; in general (a

minor point) however, page numbers would have been useful; typography and grammar require revision; e.g. in the Abstract:

Methods - '...men and women to explore barriers [not barrier] to care seeking'; '...team used a thematic content to analyse [not: analytics] the data'

Conclusion - 'Improving mens' [not: men's] pathways to care requires [not:require]' etc.

Thank you. We have carefully reviewed and revised the manuscript to correct all errors. In the methods, this sentence now reads: "The team used a thematic analysis to analyse the data."

In the conclusion, we have changed to "mens", and have changed "require" to "requires". Now the sentence reads: "Improving mens' pathways to care requires interventions that address both individual level factors but also the broader social environment including legislation and safety nets for households."

Results: Precarious socioeconomic conditions section - 'Men argued that insufficient household income constrained their agency' - do you mean 'urgency?' - otherwise not clear to me what is meant.

Thank you. No, we meant "agency". In this context, we mean men's ability to act independently or to do what they want was being affected by the flow/level of their household income, which was insufficient and irregular.

Sentence below should read '...pressure to pay rent was often a further reason of tension.'

Thank you. We have edited, and now reads: "...pressure to pay rent was often a further reason of tension."

Potential interventions summary - this is important as it summarises potential lessons learnt and points out possible improvements. I propose to present/summarise those points in a simple table or figure.

Thank you for the suggestion. We have added a textbox that summarises the main study findings.

Discussion:

If I see it correctly, no potential study limitations are mentioned. The discussion is short regarding the consideration of the existing literature, and this deserves more in-depth appreciation and comparison with other groups' findings from different areas. Impossible to appreciate or summarise the 200 hits on PubMed on 'tuberculosis care-seeking', but some aspects should be highlighted; as an example, Cremers et al Soc Sci Med 2018 and/or Cremers et al BMC Public Health 2016 might be of interest (or other papers which applied similar methodology than the one applied here by Phiri and colleagues).

Thank you for drawing our attention to additional literature. We have revised the discussion, drawn more on the broader literature, including the papers identified here, and have additionally added a study limitations section as follows:

"Study limitations" a

"The study had a number of limitations. Firstly, there were limitations to the way participants were identified and recruited. By recruiting participants through screening women at Bangwe clinic we may only have included those groups who had the economic means to visit the clinic and may have missed poorer and groups that were more difficult to recruit. Secondly, we were not able to include all participant from the first phase of the study into the next phase and included additional participants through snowballing. The iterative nature of the two-stage approach was to allow participants time to reflect on the study questions, by only including some of the participants in the second stage this may have meant participants were more inhibited in what they shared."

Reviewer: 2

Dr. Donald Skinner, Human Sciences Research Council

Overall comments:

This paper should definitely be published as it uses excellent methods and has important findings that could impact on care across sub-Saharan Africa. However, there are a number of gaps in the paper

that need to be filled first.

Generally the paper was well written, with only a few grammatical errors.

We are happy to hear your encouraging remarks.

Abstract

What were the participatory workshops?

Thank you. Participatory workshops were discussion meetings held with community members after the initial interviews. After the data from the interviews had been analysed and themes relating to men's treatment barriers identified, we then wanted to find solutions to the barriers tailored to community needs. The interviews had focused on understanding people's (in particular men's) treatment seeking experiences for TB. The purpose of the PWs was for the communities to further discuss the barriers and to identify and prioritise potential interventions to these barriers.

Interview participants were women attending primary care services and their male partners reported to have coughed for more than three weeks. Participants in the PW included some men and women that took part in the initial interviews with an additional sample of men and women not involved in the interviews. We had invited all the participants from the interviews to join the PWs, but fourteen were not available, so we used snowballing techniques with our recruited participants to identify men and women living in Bangwe who were willing to participate in the PWs.

PWs happened over a one-week period; from Monday through Friday. Each day was split into six hourly discussion sessions. Every day the meetings started at 8:30 in the morning and finished at 4:30 in the afternoon. On the first day, the research team explained the treatment barriers and in the next sessions participants gave feedback. The feedback came in form of group discussions in which the participants either clarified or added on the explained treatment barriers. The group discussions were used in combination with Image and Forum theatre where the participants created images and performed acts representing the barriers and how men experienced these barriers. This process of discussion and performance was repeated for activities about potential interventions, and carried on throughout the entire days of the workshops. The research team facilitated the group discussions and probed for more information where necessary. The discussions incorporated Image and Forum Theatre (1) where the participants performed images and acts representing both barriers and solutions to these barriers.

We have edited as follows: "Eleven women and 10 men participated in the initial interviews. After analysing the data from the interviews and themes relating to mens' treatment barriers had been identified, we held participatory workshops to further discuss the barriers and to identify and prioritise potential interventions to these barriers. PWs happened over a one-week period, with each day split into five hourly discussion sessions. We invited all participants from the in-depth interviews to join the workshops, but nine were not available. So, we used snowballing techniques with our recruited participants to identify men and women living in Bangwe who were willing to participate in the PWs. Following the workshops, we invited participants who hadn't previously been interviewed to attend an interview. Median ages by sex for the 30 study participants were 23.0 years for women and 26.5 years for men. Interviews were conducted in a private room within the research office in the clinic and averaged 40 minutes each."

There is repetition in the results, the authors should rather use the space to expand their explanation. We thank the reviewer for this comment. We have gone through the results, cutting out any repetition we have also expanded our discussion to link our findings to the broader TB literature.

Introduction

Some of the argument is a little clumsy, but the key points are there and the narrative is correct.

Gender is crucial to the argument for this paper. I would like to see this developed a little further with particular relevance to Malawi.

Thank you for raising this point. We have now provided more nuanced discussion of gender in the Malawi context both to the context section of the methods and reworked the discussion to ensure this is more specifically considered.

Methods

I am very impressed with the overall methodological approach. It shows great sensitivity to context and is a huge advance over many existing approaches.

Thank you for these encouraging remarks.

Context

Malawi has a particular history and context on gender that has committed to legislation a number of discriminatory practices that separate out power relations and roles. These should be raised.

We have now provided more context narrative on gender in the context section. It now reads as follows:

“British rule also brought the introduction of urban capitalism changing family configurations and gendered norms (25). There was increasingly nucleated family and a greater dependency of women on their husbands’ wage labour. It also physically relocated women away from their land making access to food sources more challenging (26). Today, Malawi ranks 172 out of 189 countries making it one of the most unequal countries in the world (27). “

Data Collection

More detail is required on both the interviews and the participatory workshops. The level of information required should be sufficient for the reader to really understand and if necessary get close to being able to replicated the process. In particular the participatory workshops, as a less standardized approach, need a lot more descriptive detail.

Thank you. Participatory workshops were discussion meetings held with community members after the initial interviews. After the data from the interviews had been analysed and themes relating to men’s treatment barriers identified, we then wanted to find solutions to the barriers tailored to community needs. The interviews had focused on understanding people’s (in particular men’s) treatment seeking experiences for TB. The purpose of the PWs was for the communities to further discuss the barriers and to identify and prioritise potential interventions to these barriers.

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the PWs. Following the workshops, we invited participants who hadn't previously been interviewed to attend an interview. Median (IQR) ages by sex for the 30 study participants were 34 (23-42) years for women and 37 (26.5-62.5) years for men. Interviews were conducted in a private room within the research office in the clinic and averaged 40 minutes each."

Reflexivity and the researchers comments on impact of themselves on the research need to be added.

Thank you. We have added as follows: "The research team comprised of two Malawian (one female master's student and one male researcher employed by the Research Institute who sponsored the study) and two white British women both from the UK. Our levels of education, sex, economic position and race (in the case of EM and EMACP) are likely to have shaped our interactions with the participants. MP interviewed some of the female participants and were a mixed team when we conducted the female workshops. As a research team, we all have significant experience of conducting research (3 of the 4 researchers with more than 10 years each). Following each interview and at the end of each day of the participatory workshops, we held debriefing sessions. During these sessions we reviewed emerging findings and identifying areas requiring further exploration. We also focused on how participants responded to the questions and whether we may have influenced this."

Results

The sample for the PW is not adequately described. The authors need to describe the workshops in more detail; time spent in them and level of participation for example.

Thank you. Participatory workshops were discussion meetings held with community members after the initial interviews. After the data from the interviews had been analysed and themes relating to men's treatment barriers identified, we then wanted to find solutions to the barriers tailored to community needs. The interviews had focused on understanding people's (in particular men's) treatment seeking experiences for TB. The purpose of the PWs was for the communities to further discuss the barriers and to identify and prioritise potential interventions to these barriers.

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We have edited as follows: "Eleven women and 10 men participated in the initial interviews, we stopped interviews when no themes arose. After analysing the data from the interviews and themes relating to mens' treatment barriers had been identified, we held participatory workshops to further discuss the barriers and to identify and prioritise potential interventions to these barriers. PWs happened over a one-week period, with each day split into five hourly discussion sessions. We invited all participants from the in-depth interviews to join the workshops, but nine were not available. So, we used snowballing techniques with our recruited participants to

identify men and women living in Bangwe who were willing to participate in the PWs. Following the workshops, we invited participants who hadn't previously been interviewed to attend an interview. Median (IQR) ages by sex for the 30 study participants were 34 (23-42) years for women and 37 (26.5-62.5) years for men. Interviews were conducted in a private room within the research office in the clinic and lasted between one hour and 45 minutes. All interviews and PW discussions were conducted in the local language (Chichewa) and audio recorded."

Pg 15 Ln34 – 36 not sure what this sentence is saying.

In ability physically carry on particularly to go to work prompted seek care.

Thank you. We have edited and now reads: "Inability to physically carry on, particularly to go to work, prompted seek care."

Gendered social norms

Gendered social norms

Religious restrictions as important point, but not really gender. Need a new heading.

Thank you for the suggestion. We have now assigned this section its own heading named: "Influence of religion"

Pg 14

Talk of body sculptures in the results, but this is not described in the methods. Please add to methodology. Ln 47 presume "buy" should be "but"

Thank you. We have edited and now reads: "but after a role play that featured violent physical responses from husbands', participants began to share the risks they might face".

Pg 15

The quote states it is female respondent, but the text of the quote implies a male respondent. Please check.

Thank you. We checked and can confirm that the speaker of the text is really a woman. She describes women's experiences in the second person, which excludes her as part of the gender she is referring to.

Discussion

This presented an excellent summary of the results. I would like to see some deeper analysis and some reflection on references and theory relating to adherence, and the issues of socio-economic conditions, gender and power. Power does seem to be an absent theme in the paper. There are differentials of power based on gender, economic wealth, professional status and links to state power.

Thank you. We have revised the discussion and have included references relating to men's adherence to treatment, as well as information about men being afforded more power and privilege and how these gendered economic imbalances disadvantaged women in terms of access to education and financial resources.

Key sections like conclusion, study limitations and suggested future work need to be added.

Thank you. We have now added a section about study limitations. The section reads:

"Study limitations"

"The study had a number of limitations. Firstly, there were limitations to the way participants were identified and recruited. By recruiting participants through screening women at Bangwe clinic we may only have included those groups who had the economic means to visit the clinic and may have missed poorer and groups that were more difficult to recruit. Secondly, we were not able to include all participant from the first phase of the study into the next phase and included additional participants through snowballing. The iterative nature of the two-stage approach was to allow participants time to reflect on the study questions, by only including some of the participants in the second stage this may have meant participants were more inhibited in what they shared."

Reviewer: 3

Dr. Ari Probandari, Universitas Sebelas Maret

General comment

The manuscript highlights relevant issues related to tuberculosis control in low- and middle-income countries.

Major revisions

1. Abstract-Methods: The authors wrote, “the team used a thematic content analysis to analysis the data.” (page 3, line 31). Please clarify: was it a content analysis or a thematic analysis? It is because the two analyses are different. Please also check the text about the data analysis in the main manuscript.

Thank you. We agree that content analysis and thematic analysis are different although they are closely related. Our analysis was based on themes emerging from the data.

We have corrected and now reads: “The team used a thematic analysis to analyse the data”. We have also edited this in the main paper under Analysis, now reads: “Data were analysed using thematic analysis.”

2. Abstract-Conclusion: The statement of the conclusion should include the answer of the research questions. Please re-write the conclusion incoherent with the study aim.

Thank you. We have edited the conclusion and made it more responsive to the research question.

Now reads: “Improving mens’ pathways to care requires interventions that consider contextual issues by addressing individual level socioeconomic factors but also broader structural factors of gendered social dynamics and health systems environment.”

3. Methods: Who did the interviews and facilitators of the workshop? How did the researcher build rapport with participants?

Thank you. The interviews were done by the researcher/author MP. Participants in this study were recruited from a study TB that was conducting TB screening using X-ray. Before recruitment to the study, the researcher spent time at the clinic where the TB study was being implemented. During this time, the researcher would interact with both the TB study team and the participants, telling them about the study and responding to their questions, and developed a rapport with both groups.

1. Methods: The authors wrote, “Not all participants were available, so we used snowballing techniques...” (page 8, line 14). How many participants were not available when the researchers contacted them? Please elaborate on their characteristics.

Thank you. We have edited and now read: “We invited all participants from the in-depth interviews to join the workshops, but nine were not available. So, we used snowballing techniques with our recruited participants to identify men and women living in Bangwe who were willing to participate in the PWs. Following the workshops, we invited participants who hadn't previously been interviewed to attend an interview.”

Concerning the characteristics of the participants, we have added as follows: “Median ages by sex for the 30 study participants (Appendix A) were 23.0 years for women and 26.5 years for men.”

4. Methods: Did the authors ensure data saturation? Please elaborate.

During our initial phase of interviews, we did aim for data saturation and found that no new broad themes were coming out from interviews.

The methods now read: “Eleven women and 10 men participated in the initial interviews; we stopped interviews when no themes arose.”

5. Methods: Please include a table that contains examples of the coding procedures. The table includes the example of questions, meaning units and codes/categories/themes

Thank you. We have included a coding frame as a Appendix B.

6. Methods: What techniques the authors did to improve the trustworthiness of the study?

Thank you. Authors MP and EMACP held debriefings soon after every interview and compared these with initial summaries of the data. As data analysis occurred concurrently with data collection, the authors also from time to time debriefed on the coding procedures to ensure that interpretations agreed with what the participants actually said. The purpose of doing this was to ensure gaps in the

data being generated were addressed in a timely manner, as well as ensuring that research questions were being addressed.

We have added some of this information to the Methods sections.

7. Methods: Was there a specific technique of data collection during the participatory workshop that the authors apply?

Data collection during the workshops drew on qualitative approaches. Discussions during the meetings took the form of focus group discussions, with researchers presenting the topics of discussion and the participants exploring them. The group discussions were used in combination with Image and Forum theatre (1) where the participants created images and performed acts representing the barriers and how men experienced these barriers. This process of discussion and performance was repeated for activities about potential interventions, and carried on throughout the entire days of the workshops. The research team facilitated the group discussions and probed for more information where necessary.

We did not use a specific guide for the participatory workshops. Rather we had a programme for the different activities, and a list of the different barriers to be discussed on a paper

8. Methods: The authors should include a description of reflexivity and subjectivity in the methods.

Thank you. We have reflected as follows: "The research team comprised of two Malawian (one female master's student and one male researcher employed by the Research Institute who sponsored the study) and two white British women both from the UK. Our levels of education, sex, economic position and race (in the case of EM and EMACP) are likely to have shaped our interactions with the participants. MP interviewed some of the female participants and were a mixed team when we conducted the female workshops. As a research team, we all have significant experience of conducting research (3 of the 4 researchers with more than 10 years each). Following each interview and at the end of each day of the participatory workshops, we held debriefing sessions. During these sessions we reviewed emerging findings and identifying areas requiring further exploration. We also focused on how participants responded to the questions and whether we may have influenced this."

9. Results: Please make the readers know that the quotations were originated from various individuals. In this current version, the readers only know that the quotations are from female/male participant and PW/IDI.

Thank you. We have added numbers to differentiate the origin of the quotations as follows: "[Male participant, IDI018]"

10. Results: Can the authors develop a diagram that can synthesis the results from the IDI and PW? I think that diagram will help the readers to understand the findings easier.

Thank you. Rather than a diagram, we have included a textbox that summarises the study findings. We have also included a coding frame that lists down the themes/codes that emerged from the data. We have supplied these as Appendices.

11. Results: The authors should explore the different patterns among different characteristics of age, education, and occupation. If there are no different patterns, then the authors

Thank you. Our recruitment strategy was to identify participants through women who presented at the clinic and reported that their husband had a cough. We did not include age, education or occupation in this recruitment. However, we identify participants from a range of ages through this strategy. Broadly we did not find significantly different patterns for men of different ages. All participants were employed in piece work, so we were not able to see any significant differences.

12. Discussion: What are the implications of the findings, particularly for TB control in the country?

Thank you for raising this point. We have now added this to the discussion:

“At present, TB control in Malawi predominately depends on men and women presenting at the clinic with symptoms and then being referred for treatment. This approach is leading to men delaying care seeking. Our findings and interventions speak to the need for interventions, not only to strengthen health systems and community-based active case finding interventions but also to intervene to address upstream factors including providing support for men to take time off work.”

13. Discussion: What are the limitations of the study?

Thank you we have now added a limitations section which reads as follows:

“Study limitations”

“The study had a number of limitations. Firstly, there were limitations to the way participants were identified and recruited. By recruiting participants through screening women at Bangwe clinic we may only have included those groups who had the economic means to visit the clinic and may have missed poorer and groups that were more difficult to recruit. Secondly, we were not able to include all participant from the first phase of the study into the next phase and included additional participants through snowballing. The iterative nature of the two-stage approach was to allow participants time to reflect on the study questions, by only including some of the participants in the second stage this may have meant participants were more inhibited in what they shared.”

Reviewer: 4

Prof. Silvia Chiang, Brown University

Comments to the Author:

Thank you for this very interesting manuscript! This study uses in-depth interviews with 30 participants and participatory workshops with 23 participants to explore barriers to for seeking care for TB symptoms among men in Blantyre, Malawi. The study also aimed to identify interventions to address these barriers. The authors used thematic content analysis for the findings and reported three factors that shaped men’s care-seeking behavior: precarious socioeconomic conditions, gendered social norms, and the role of the health system. This study addresses an important issue and does so using an innovative approach. Below please find my suggestions for strengthening the manuscript:

Thank you very much for your encouraging words and your summary of the study. Below our response to your queries/comments.

1. ABSTRACT: In the manuscript, the authors state that the aim of the study is “to understand barriers and develop interventions to improve pathways to diagnosis and care of TB for men” (page 7, lines 29-30). To improve clarity, the abstract should also specify that this is the aim (page 3, lines 12-14). I further suggest that the title should allude to the focus on barriers faced by men.

Thank you. We have edited, now reads: “This study aimed to understand the barriers to seeking care for TB for men and co-create interventions to address these barriers”.

We have also edited the title, now reads: “Improving pathways to care through interventions co-created with communities: a qualitative investigation of mens’ barriers to tuberculosis care-seeking in an informal settlement in Blantyre, Malawi.”

2. ABSTRACT and RESULTS: One of the factors shaping men’s care-seeking behaviour is referred to as “the role of the health system.” I would suggest being more specific—something like “dissatisfaction with the health system” or “suboptimal health services.”

Thank you for pointing this out and for the suggestions. We have changed and made it more specific as follows: “constraints in the health system.”

3. METHODS: There are important details of the methodology that have not been mentioned. For instance, did the authors decide on the number of IDIs a priori or recruit to the point of thematic saturation? Did all the male partners of the recruited women participate? Were the interviews

structured, semi-structured? How long, on average, did IDIs and PWs last? Could the authors provide the IDI and PW guides as supplementary materials? I suggest the authors refer to the COREQ guidelines to make sure all relevant information is included (Tong et al. Int J Qual Health Care, 2007).

Thank you. Not all the male partners of the recruited women participated. The reason others did not participate was because they had travelled and were not going to be back soon. The interviews were semi-structured. Some of the questions that we asked were based on the topic guide we had prepared based on the initial literature review, and others were based on the responses from the participants.

Each in-depth interview averaged 40 minutes. The participatory workshops happened over a period of 5 days; from Monday through Friday. Each day of the was divided into discussion/performance sessions of about one hour each.

We have included the guide that we used for the semi-structured interviews. We did not use a specific guide for the participatory workshops. Rather we had a programme for the different activities, and a list of the different barriers for discussion. We have incorporated some of this information into the methods and limitations sections. We checked the COREQ guidelines and have referenced them in the methods section.

Unfortunately, we used more than one topic guides for the interviews because we adapted them to each participant. We are happy to upload a board topic guide which provided key themes which were explored during the interviews.

4. METHODS/RESULTS: Since the aim of the paper is to identify barriers to seeking care for TB, did the interviewers ask about the participants' knowledge of TB, and that cough >2 weeks could be a symptom of TB?

Thank you for this question. Unfortunately, we did not ask the participants specifically about their knowledge of TB or TB symptoms, rather we asked them about cough in general and the steps they normally took to address the cough. Their knowledge about TB or symptoms was reflected in what they did about the cough. For example, they said they did not visit the hospital but only took Panadol because the cough lasted only for a few days and they thought it was simple, or they visited the hospital because the cough was persistent and they thought it could be TB.

5. RESULTS: In the section on interventions, the authors mention reliance on faith healing and traditional medicine as a barrier to seeking the "right" care (page 17, lines 14-16). However, this barrier isn't mentioned before, so this section (page 17, lines 14-50) seems to come out of nowhere. Is this barrier substantial enough to be the focus of its own section of the results? If not, does it merit so much emphasis in the interventions section? Also, the authors do not elaborate on "drawing on local leadership to encourage men to seek care," which was mentioned as one of the suggestions from participants (page 16, lines 22-25). Could the authors elaborate on this suggestion, since it seems to address the barrier of gendered social norms, especially since it's mentioned again in the discussion section (page 19, 48-52)?

Thank you. Yes, faith healing and traditional healing were important considerations of factors shaping people/mens' health practices and behaviours. We have added a new heading for the section about faith healing, and a new paragraph about traditional medicine. We have named the heading: "Use of alternative medicine to biomedical care."

The added texts about traditional medicine read as follows: "Further, participants also discussed people diagnosing and treating illness using traditional techniques, and cited dependence on traditional healing as preventing people from utilising formal health services."

"Another problem that stops people from visiting the hospital is belief in traditional medicine. There are people that trust traditional medicine and oppose seeking treatment from the hospital. [Male participant, PW003]"

6. DISCUSSION: I think this section is the weakest of an otherwise very interesting paper. Much of this section simply summarizes the results (for e.g. page 19, lines 15-36). It would be much more interesting to discuss the implications of these results here (for e.g. page 20, lines 27-42). The authors could compare their findings to those from other settings (as they do on page 20, lines 27-42), discuss whether the interventions suggested by the study participants have been successful in other settings, etc. Another idea would be to tie in the findings of the results to the theoretical framing of the paper (page 6, lines 27-31). Please also include a limitations section.

Thank you. We have revised the discussion, providing more context narrative on gender and comparing to findings from other settings:

“British rule also brought the introduction of urban capitalism changing family configurations and gendered norms (25). There was increasingly nucleated family and a greater dependency of women on their husbands’ wage labour. It also physically relocated women away from their land making access to food sources more challenging (26). Today, Malawi ranks 172 out of 189 countries making it one of the most unequal countries in the world (27).”

“The Gender Inequality Index (GII), demonstrates that Malawi is very unequal country with men favoured in a range of indicators. Men are afforded more power and privilege than women, with greater access to education and financial resources. However, this has not translated into better health outcomes. This reflects global trends from UK, to Central Asia and Southern Africa of men delaying health care seeking (16,17,36,37) that echoed our own findings. In the literature on TB, findings from ethnographic research undertaken in Khayelitsha Cape Town, which found a range of factors shaped men’s care and adherence to treatment, lack of food and economic constraints were identified reflecting those found in our study (38). In Kenya, ethnographic work found that treatment seeking was delayed by individual (39), social-cultural and structural factors. Chikovore et al (2014 and 2017) in urban Blantyre that men’s need to be perceived as strong meant they would delay seeking care. They also found that the association between TB and HIV meant men would delay care seeking due to associated stigma from HIV.”

Concerning the question about the implication of the results, we have added this to the discussion: “At present, TB control in Malawi predominately depends on men and women presenting at the clinic with symptoms and then being referred for treatment. This approach is leading to men delaying care seeking. Our findings and interventions speak to the need for interventions, not only to strengthen health systems but also to intervene to address upstream factors including providing support for men to take time off work.”

Concerning the question about study limitations, we have added this to the discussion:

“Study limitations”

“The study had a number of limitations. Firstly, there were limitations to the way participants were identified and recruited. By recruiting participants through screening women at Bangwe clinic we may only have included those groups who had the economic means to visit the clinic and may have missed poorer and groups that were more difficult to recruit. Secondly, we were not able to include all participant from the first phase of the study into the next phase and included additional participants through snowballing. The iterative nature of the two-stage approach was to allow participants time to reflect on the study questions, by only including some of the participants in the second stage this may have meant participants were more inhibited in what they shared.”

7. TABLE 1: The age variable would be more informative if the authors could give the median and IQRs. Also, could the authors provide the percentages in addition to the numbers in each category?

Thank you. We have now included the mean (IQR) ages by sex as follows: “Median (IQR) ages by sex for the 30 study participants were 34 (23-42) years for women and 37 (26.5-62.5) years for men.”

8. REFERENCES: Please cite the most updated Global Tuberculosis Report 2020.

Thank you. We have updated to this citation.

9. There are some grammatical errors that will need to be addressed in editing. Also, on page 16, line 13, I think “partner” is supposed to be “participant.”

Thank you for pointing this out. We have re-read the paper and tried as much as possible to correct the identified errors.

VERSION 2 – REVIEW

REVIEWER	Skinner, Donald Human Sciences Research Council, Faculty of Health Sciences
REVIEW RETURNED	27-Feb-2021

GENERAL COMMENTS	bmjopen-2020-044944.R1 Excellent paper again. It is improved. My only concern is that the methods could be described more, particularly the participatory workshops. For, example, most readers will not be aware of the Theatre of the Oppressed or Forum theatre approaches. A few lines explaining them and how they were used in this study would enhance the paper greatly. I acknowledge that describing methods in detail is more complicated in participatory work than in more structured approached, such as RCTs or cross-sectional surveys, but some more detail would be useful. Minor error Pg 8 ln 14 I presume you mean “no further themes arose”
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REVIEWER	Probandari, Ari Universitas Sebelas Maret, Department of Public Health, Faculty of Medicine
REVIEW RETURNED	14-Feb-2021

GENERAL COMMENTS	Thank you for responding the reviewer’s comment point by point adequately. No more questions and comments from me.
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VERSION 2 – AUTHOR RESPONSE

Reviewer: 3

Dr. Ari Probandari, Universitas Sebelas Maret

Comments to the Author:

Thank you for responding the reviewer’s comment point by point adequately. No more questions and comments from me.

Thank you for your time reviewing our responses and your final encouraging comment.

Reviewer: 2

Dr. Donald Skinner, Human Sciences Research Council

Comments to the Author:

bmjopen-2020-044944.R1

Excellent paper again. It is improved. My only concern is that the methods could be described more, particularly the participatory workshops. For, example, most readers will not be aware of the Theatre of the Oppressed or Forum theatre approaches. A few lines explaining them and how they were used in this study would enhance the paper greatly. I acknowledge that describing methods in detail is more complicated in participatory work than in more structured approaches, such as RCTs or cross-sectional surveys, but some more detail would be useful.

Thank you for taking the time to review our responses and also for raising this. We have described the Theatre of the Oppressed and how we used the approach in the study further, and now reads: PWs took an art-based approach and drew on Theatre of the Oppressed (TO) as a research method in conjunction with group discussions. TO is a participatory theatre making methodology developed by Augusto Boal (31, 32) which includes techniques such as Image Theatre and Forum theatre. In our study, games and exercises were used to break down barriers between participants and the research team, before using Image Theatre. Participants made still images with their bodies to explore gender norms, experiences of sickness and healthcare, which were then discussed as a group. The process continued by developing role plays and finally a Forum Theatre performance for the study team which demonstrated some of the challenges of men seeking healthcare, and gave opportunities for the audience to suggest and try out different solutions onstage. To allow for open discussion of potentially sensitive gender norms and behaviours these PWs initially divided groups by gender, working separately with men and women before bringing the two groups together to make the performance.

Minor error

Pg 8 ln 14 I presume you mean “no further themes arose”

Thank you for identifying the error. We have corrected and now reads: Eleven women and 10 men participated in the initial interviews; we stopped interviews when no further themes arose.

Reviewer: 3

Competing interests of Reviewer: None declared

Reviewer: 2

Competing interests of Reviewer: none declared