Author’s response to reviews

Title: Why caretakers bypass Primary Care facilities for child care - A case from rural Tanzania.

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Author's response to reviews: see over
Reviewer's report:
General Comments:
The research question crafted by the author capitulate factors influencing bypass of primary care facilities and exploration of caretakers experiences in seeking care for their under five children. The question posed is important and certainly deserves some attention. However, the authors depicted quality of the primary health services through experiences and perceptions of the caretakers recruited at district health facilities through non-probability convenience sampling; a weak approach in the study. The factors which popped out from study population are not necessarily the independent predictors for a caretaker if recruited at household/first level care facility. Keeping in view of above points, enrolment of study population at district level did not truly answer research question. The research question could be addressed more appropriately through generation of data at the primary care facilities/households. If this is not possible, limitation section shall justify all the weaknesses of this study.

The discussion and the conclusion section are supported by data. The conclusion recommends provision of diagnostics and drugs for malaria, pneumonia and diarrhea treatment. Are you sure, the bypassing frequency can be reduced if these essentials are provided at PHC facilities? Evidence suggests, even meeting the needs of the supply side does not truly address reasons for bypassing.

Response
A. Regarding comments on sampling
We agree that non-probability convenience sampling in general is a weaker approach for securing representativeness than random sampling. However, in our situation, with a limited number of district hospitals in the rural area in question, random sampling of hospitals may not secure representativeness. The two district hospitals in this study were purposely selected because the districts served by these hospitals were predominantly rural (in order to cover an area of rural Tanzania), endemic for malaria (one among our three diseases of interest) and also was easy to access. For more description of the districts please refer to the methodological section of the revised manuscript page 5 and 6.

In the two hospitals selected, we aimed at enrolling all sick children presenting at the outpatient department between 9 am and 2 pm with a diagnosis of malaria, pneumonia or diarrhoea. This was planned in order to attain large enough sample during the time available for data collection during the period of PhD studies for the principle investigator. By reviewing all children and including all who fulfilled the inclusion criteria for the quantitative survey, our sample should be representative of all children attending the district hospitals in the period in question (July 2009 to Jan 2010). After 2 pm out-patient departments are usually quiet except for sporadic usually severe cases, which if admitted we reviewed them the next day in the ward and were included if met the criteria. We selected the three diagnoses above, because these diseases are the three main causes of underfive deaths in the area studied and also in Tanzania in general.
B. Hospital-based versus community based study
We agree that the question might be addressed more appropriately through generation of data at community/household level. One reason why we chose to do a hospital-based survey was that we primarily aimed to study care-seeking in relation to current (ongoing) child’s illness. This was done in order to minimize recall bias related to studying previous illness episodes.

For studying factors related with bypassing of primary care facilities in respective districts, we had two options of study participants’ recruitment:
1. Household level - by interviewing caretakers about care seeking on previous child’s sickness episode and establishing whether they at all utilized their nearer primary care facilities or not.
2. District hospital level - since district hospitals serve as referral hospitals in respective districts, it is easy at this level to establish those who utilized primary care facilities.

Study participants could not be recruited at first level care facilities since we aimed at establishing factors related with bypassing such facilities.

Our study also aimed at establishing various background and care-seeking factors (utilization of PHC facilities being among them) in relation to child’s disease severity status. This could not be achieved through household-based study. It would also be very demanding to identify sick children at household level.

We however acknowledge that being a hospital-based study; the results are not fully representative of all caretakers in the district. This limitation is now more clearly stated in the section “methodological strengths and limitations” section on the revised manuscript’s page 21.

C. Lack of diagnostics and drugs as a reason for bypass
We agree that, even meeting the needs of the supply side is not the only factor that should be addressed to reduce frequency of bypassing. However in our study, the main reason given for bypassing PHC facilities were lack of diagnostics followed by lack of drugs. Similar findings were also reported from other studies referred to in our article. We hence acknowledg that provision of diagnostics and drugs for malaria, pneumonia and diarrhea treatment could by itself not necessarily result in utilization of PHC facilities. Other factors like health worker’s conduct need to be addressed. We have included a comment on this in the conclusion section of the revised manuscript page 22.

D. Limitation section and title
We have expanded the limitation section to include the comments referred to above. We have also revised our title. See new title below:-

Why caretakers bypass primary care facilities for child care – A case from rural Tanzania.
I. Major compulsory revisions

1. Background section is not crispy. “Bypasser” is keyword in this study and deserves some debate in your background. Some content about previous evidence regarding exploration of factors influencing bypass shall be added. If there is limited evidence, even it can be taken as rationale of your study.

Response
Factors influencing bypassing in previous studies have been discussed in the discussion section (see original manuscript page 18 & 19). We have also added and referred to factors influencing bypass from some previous studies in the introduction of the revised manuscript page 5.

2. Case definition for the “Bypassers” as described in the data analysis section shall be moved to methods section. This definition should be specified more accurately to differentiate between a bypasser and non-bypasser, e.g. specification of geographical distance from the primary health facility.

Response
We have now refined and expanded our definition (see revised manuscript page 8).

3. The type of sampling technique used to identify sample for the quantitative component shall be justified i.e. it appears that non-probability convenient sampling was practiced to identify study population. There is dearth of information in the methodology section about the number of respondents recruited/interviewed in the qualitative and the quantitative section. The study population shall be demonstrated in the methods section.

Response
We refer to the discussion of sampling in our first response above. The methodological section relating to sampling has been expanded (see revised manuscript page 6 & 7)

4. In the conclusion and the policy implication section, describe the importance of this phenomenon? E.g. increased frequency of bypassing will lead to weakened PHC facilities and less coverage for poor. As a result, there may be more focus by the health authorities to spend more in the secondary care setup carrying unnecessary burden.

Response
We acknowledge that above might be among conclusions that could be drawn from our study findings, however we have no enough evidence to support such a conclusion as we did not seek information on the quality of services received at the district hospitals but rather of the PHC facilities. So we think the general conclusion would be that there is a need for upgrading services provided at the primary care facilities.
II. Minor compulsory revisions:
1. The caretakers who were interviewed after admission and treatment of children in the ward may be having different levels of satisfaction as compared to a caretaker interviewed in outdoor clinics. This leads to information bias and should be addressed in the limitation section of the study.

Response
Our study did not inquire information on quality of care received at the study hospitals (district hospitals) but rather of the primary care facilities where caretakers were attended before coming to the district hospital. Hence, we do not feel that this kind of bias would greatly affect information on the perceived quality of care at the PHC facilities or reasons for bypassing them.

2. The second paragraph of the “qualitative data collection” section states, “caretakers were asked to recall details on action….” A caretaker who recalled index child’s illness that occurred previously may give varied responses as compared to a caretaker who recalled recent episode. Recall bias shall be addressed in the limitation section of the study.

Response
We gathered information on current illness, and thus information is less prone to recall bias than studies based on information on previous illnesses. Thus, we regard this aspect to be a methodological strength of our study.

3. Describe that the association between potential factors and bypassing is weak due to lack of temporal relationship within your study. Address this in limitation section.

Response
Our study is cross-sectional, but in the history taken, factors affecting bypass are perceived to be a cause of bypass, before bypass occur. The potential factors influencing bypass were perceived to be present long before bypass happened. Therefore we do not think this is an important source of bias in our study.

4. Quantitative analysis is a stepwise approach. Before going into multivariate analysis, it would be ideal to add in table between table 1 and 2 showing significant bivariate analysis supported by p-value.

Response
In table 2 we have given unadjusted bivariate odds ratios (OR) before going into presenting the odds ratios based on multivariate analyses (AOR). We gave 95% confidence intervals and marked significant associations at the 5% level with a *. Thus, we think that adding P-values would not give much more information and should therefore not be necessary.

5. In the results section under heading, “Bypass of primary care facilities”, the significant adjusted ratios (AOR in Table 2) shall be justified with p-value.

Response
We gave 95% confidence intervals and marked significant associations at the 5% level with a *. Thus, we think that adding P-values would not give much more information and should therefore not be necessary.
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests.

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**REFEREE 2. N.S.**

**Reviewer's report:**
1. Major Compulsory Revisions

   a. Study design and data collection: the study design and methods for data collection need to be described in details and separate from each other.

   **Response**
   The section has been revised (see methodological section of the revised manuscript page 6 & 7)

   c. Please provide the details for sample size calculation, how you come-up with a sample size of 560 caretakers for the quantitative survey

   **Response**
   Information of sample size calculations has been added to methodology section (revised manuscript page 6).

   **Comment**
   c. Please compare the characteristic of those who bypass the primary health care facilities with those who did not

   **Response**
   We removed the non-bypassers column from table no. 2 of the submitted manuscript since we felt the proportions of non-bypassers for each characteristic could be easily obtained by subtracting from the column of the total number of caretakers who reported a nearer PHC facility (n=348). And different distributions are indicated by OR $^1$.

   d. Conclusion and policy implication:
   This is understood that various services and facilities are provided at different levels of care, e.g. the availability of diagnostic facilities for malaria could not be an issue related to quality of care at primary health care facility as these facilities are not suppose to provide such services. Other issues such as availability of medicines and qualified human resource for health could be linked with quality of care. The study was aimed to assess the frequency of bypass, factors influencing bypass and explore the experiences of care takers seeking care for
their under-five children at such facilities. This study was not aimed to assess the quality of care at the primary health care facilities. Therefore, the authors should link the conclusion and policy implication with study findings/results and objectives. For instance; one of the policy implications could be to upgrade primary health care facilities and add diagnostic services for malaria at the primary care level. In addition, equity may not be an issue, as all primary health care facilities may provide the same services; better services in District Hospital refer to different function and scope of the facility rather than to equity.

Response
We agree that our study was not primarily aimed at assessing quality of care at PHC facilities. However this came out as the main reason for bypassing such facilities. The above suggested policy implication seem to be similar to one of our recommendations which was the provision of simple investigations like rapid malaria diagnostic tests at PHC facilities (see conclusion and policy implication section on page no. 22 of original manuscript).

With regard to equity issue, we felt poor services at PHC facilities will result in bypassing only among individuals who can afford travel costs to get better services at higher level hospitals while those with no means of travelling will be left with only one option of poor services from PHC facilities. While by proving better services at PHC facilities even poor people with no means of travelling will still get access to quality services.
We have however, revised the conclusion section on the abstract and main conclusion to make the association between poor quality services and equity issue more clear (please refer to page 3 & 22 of revised manuscript respectively).

2. Minor Essential Revisions
a. Quantitative data collection:
A. “Some children with a provisional diagnosis of malaria were also included even if the subsequent result of malaria rapid test was negative”. The study should have clear inclusion and exclusion criteria for the study subjects and need to be followed accordingly. Why some patients with provisional malaria diagnosis were included in the study and others with the same diagnosis were not included.

Response
Due to the primary aim of our main study protocol, which was to determine factors related with disease severity from malaria, pneumonia and diarrhea, we intended to include children with only the above three diagnoses. However 77 children (13.8%) have been interviewed before the malaria confirmation tests were performed and which turned negative. These children were excluded for disease specific analysis but were included in the analysis for PHC utilization as their inclusion did not seem to affect our findings but positively increased our sample size.

B. “Caretakers of the severely ill children who died before the interviews were conducted were not included”. Please mention the number of such cases.

Response
During the 5 months study period we only managed to perform interviews with 7 out of 31 caretakers of children who died from the three diseases mentioned above. The main reason was that most children who died passed away within a few hours of hospital stay as they presented with very severe disease. As part of our ethical study conduct, we did not perform interviews until the child was stabilized and the caretaker was calm. We also should mention that our study was not designed to capture deaths but rather severe disease.

C. Please list the variables which were included in the questionnaire for both the quantitative and qualitative components.

**Response**

**Quantitative component**

Apart from variables presented in tables 1 and 2, other variables in our study were:
- Presenting symptoms including history of convulsions
- Type of treatments received prior coming to the district hospital
- Use of local herbs
- Referral information
- Information on previous child loss (death)
- Care-taker’s Knowledge, Attitudes and Practises towards common symptoms of childhood illnesses.
- Duration of hospital stay and child final outcome (whether discharged or died).

**Qualitative component**

For the qualitative part, our study aimed at obtaining detailed care-seeking information (day to day) from the first time the care-taker noted the first symptom of the child current sickness episode. Hence we did not have any pre-determined variables but rather follow-up questions depending on how long the sickness was and what actions were taken.

**Qualitative data collection:**

D. Why the caretakers of only severely ill child were selected for in-depth interviews? Why not the caretakers of all children admitted to the hospital?

**Response**

We selected caretakers of only severely-ill children for in-depth interviews because these would provide a detailed care-seeking history (as compared to mild cases with short duration sickness). This is because we aimed at exploring possible contribution of different potential factors (including services received from PHC facilities) to child’s progression to severe disease.

This information has also been added to the revised manuscript data collection section page 7.

**Data analysis**

E. “The variables selected for the multivariate model were either significant (p-value <0.05) in the bivariate analysis or shown to be significant in previously published studies” please add the references for such studies published previously
Response
We have now added references for this matter (ref. no 16-18, page 8).

Discussion:

F. “The above two investigations are commonly unavailable at most primary care facilities in Tanzania”. Please add the reference

Response
A reference has been added (reference no. 19).

G. Frequent repetition of the findings with inadequate comparison with findings from other studies conducted in Tanzania, region and other part of the world. The authors are requested to compare their finding with other studies conducted on the same subject instead of repeating their results.

Response
Referring to our main study objectives, which were related to bypassing of PHC facilities as related to the quality of services at such facilities, our articles tried to compare our findings with previous published studies on this matter (see references 7-9, 11, 12, 29, 30-33).

H. Please describe the measure taken to minimize the effects of study limitation on result/findings

Response
We have addressed this on the study strengths and limitation section of the revised manuscript page 21.

I. Table 1. Please remove the word background from the title

Response
Done.

3. Discretionary Revisions

a. “abstract” and “background” replace the following:
   1. Qualitative findings to in-depth interviews - Changed
   2. 30 were interviewed qualitatively to 30 in-depth interviews were conducted - Changed
   3. Investigation to diagnostic - Changed
   4. Health intervention to health services – we wish to retain the word interventions on the background as this statement was obtained from a reference and pertains poor access to all health intervention and not only health care services.

   5. Multiple lacks - changed to multiple deficiencies
   6. Please replace “lack of investigation” to “lack of diagnostic facilities” - Changed
   7. Lack of investigation:
   8. Please replace “… interviewed qualitatively” to “in-depth interviews” - Changed
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests