

## Peer Review Report

# Review Report on Chronic conditions and multimorbidity among middle-aged and elderly peri-urban dwellers in Dar es Salaam, Tanzania

## Running head: Chronic conditions and multimorbidity among middle-aged and elderly peri-urban dwellers in Tanzania

Original Article, Int J Public Health

Reviewer: Mkhululi Wami

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### EVALUATION

#### **Q 1** Please summarize the main findings of the study.

The study looked at the prevalence of chronic conditions and multi-morbidity among middle-aged and elderly members of the population through a community-based survey in Tanzania. The study uncovered high levels of multi-morbidity among the sampled population. In addition, for some conditions, important differences were revealed by gender and age. As a highlight of this burden, of the 17 chronic conditions assessed, the study estimated a multimorbidity prevalence of 73.7% among middle-aged and elderly peri-urban dwellers in Dar es Salaam. These study findings illustrate how multiple chronic conditions affect elderly populations in sub-Saharan Africa, further creating a health burden in the already resource-limited region. The sex and age-specific differences found in this study have important implications from a policy point of view. For example, these results would suggest that broad approaches to the diagnosis, treatment, and prevention of chronic conditions may be required to tackle the issue of multimorbidity in this region.

#### **Q 2** Please highlight the limitations and strengths.

Strengths:

1. One of the main strengths of this study is the number of chronic conditions assessed (17). The prevalence of multimorbidity has been grossly underestimated in most studies because they only tend to focus on a few specific conditions. By collectively looking at several conditions, the study gives a broad spectrum and the extent of the health burden often ignored in the region.
2. The statistical analyses were rigorous and the results were well reported. The methodologies adopted in the study were quite robust.
3. The study was well designed and the conclusion drawn has important implications for policy.

Limitations:

Like any other study of this form and as the authors have already highlighted, the screening tools still need to be further evaluated in these populations. Nonetheless, the authors went a further step by considering both self-reported and some body measurements.

Although it may be difficult to generalize some of the findings, and take nothing away from this study, it provides valuable data for future research as well as for informed policy implementation. More of such studies should be encouraged.

**Q 3**

Please provide your detailed review report to the authors. The editors prefer to receive your review structured in major and minor comments. Please consider in your review the methods (statistical methods valid and correctly applied (e.g. sample size, choice of test), is the study replicable based on the method description?), results, data interpretation and references. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

I enjoyed reviewing this manuscript and this is a valuable study that adds the much-needed data for informed decision-making. The manuscript is well written. However, I have a few minor and major comments that may help enhance the study further as highlighted below:

Minor:

Results:

pg7: lines 234–244: May be worth noting in that the odds ratios are quite small and should not be over-interpreted.

Pg7: line 244: “Sex and interaction...” This sentence was not clear to me, are you interpreting the main and interaction effects or the model with no interaction as well as the model with an interaction? Edit accordingly.

Discussion

pg 7: lines 259–271: No need to repeat the reporting the actual results here but can just mention them as main findings.

Pg 8. Practical implications: This is a very important section, also consider this in terms of policy. What needs to be done, how can the policy makers, govt etc and existing policies be adapted to curb this growing disease burden. For example, careful planning for resource allocation, different strategies/ approaches to target multiple morbidity at once. Most health programs in SSA tend to focus on the most commonly diagnosed conditions instead of multimorbidity.

Pg.9 strengths and limitations: It may be worth noting that some of the results need to be interpreted with caution, especially the very small but significant odds ratios (see my comment above).

Pg 9: Conclusion: One of the take-home messages should highlight the need for the stakeholders to act. The results have shown that the prevalences are quite higher than previously estimated and they are more likely to increase unless something is done or the current strategies are enhanced.

Table 4: A very important table of results. Consider making the annotations symbols clearer to what they refer to in the table. For example, the asterisk (\*) is used for significance but there is also double (\*\*) and triple (\*\*\*). At first glance it can make the table difficult to read.

Major:

My major concern was in the Data Analysis section. Overall, the methodology for drawing the main conclusion was robust, but I have a few questions:

1. Pg 5: lines 148–151: “Statistical differences between M/F study participants....”

I do not entirely agree with the rationale of the authors in statistical testing for these differences. Although the authors use non-parametric tests (Wilcoxon rank-sum the Pearson's  $\chi^2$  tests) to avoid any distributional assumptions, these tests are less powerful and with such large sample size they may not be a good idea. The descriptive summaries in table 1 would be powerful enough to demonstrate existing differences in the variable designs. This is more to do with the study design than actual differences in the sample and hence going on to statistically test for these differences does not address any specific hypothesis. It helps to see that there were some differences descriptively and this can be kept in mind in the main results, especially in the case of some of the differences seem to be extreme or caution against sources of potential bias. Picking one example from table 1 (age), there was a highly significant difference ( $P < 0.001$ ) between males and females, but looking at the medians and the IQR, there is an overlap that suggests more of sample variability than actually important differences between male and female ages. I would greatly suggest that the authors consider avoiding the p-values in table 1 because they are not necessarily testing what they are meant to test. However, I leave this to the discretion of the editor.

2. One main concern is the issue of multiplicity. The authors should consider highlighting this inherent issue in the limitations and also when interpreting the result not to focus too much on significant p-values. There is nothing much that the authors can do about this, understandably so especially when looking at such many conditions at once.

3. Closely related to the above, for example, the table on correlations, for such the significance of the correlations can be highly confounded and hence these are more descriptive, and the interpretation thereof should demonstrate this.

#### PLEASE COMMENT

##### Q 4 → Is the title appropriate, concise, attractive?

The title is appropriate for the study and attractive. It gives an attractive picture of what the study might entail and when reading the paper it matches perfectly.

##### Q 5 → Are the keywords appropriate?

Key words appropriate. One suggestion is to include: middle-age

##### Q 6 → Is the English language of sufficient quality?

The language was of sufficient quality. The authors did a good job and it's clear that they put a lot of effort to make sure the manuscript is well written.

##### Q 7 → Is the quality of the figures and tables satisfactory?

Yes.

##### Q 8 → Does the reference list cover the relevant literature adequately and in an unbiased manner?)

I found most of the references very much relevant.

#### QUALITY ASSESSMENT

##### Q 9 → Originality



##### Q 10 → Rigor



##### Q 11 → Significance to the field



##### Q 12 → Interest to a general audience



##### Q 13 → Quality of the writing



##### Q 14 → Overall scientific quality of the study



#### REVISION LEVEL

##### Q 15 → Please make a recommendation based on your comments:

Minor revisions.