Reviewer’s report

Title: Determining type 2 diabetes-related health care needs in an indigenous population from rural Guatemala: A mixed methods preliminary study.

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Reviewer: Joaquin Barnoya

Reviewer’s report:

I reviewed the manuscript “Determining type 2 diabetes-related health care needs in an indigenous population from rural Guatemala: a mixed methods preliminary study.” By Greiner et. al.. Using qualitative and quantitative methods this paper yields a lack of information and access to diabetes treatment in rural Guatemala. Even though informative (particularly of a region of the world that we barely get anything published on diabetes), the manuscript requires considerable editing before publication. In particular, some of the results are overstated and it is not clear what’s next (it is “preliminary”). It should also be clarified that the issues that arise in rural Guatemala are not particular to the Maya population or to this country. It is the case in most regions of the world that the rural and of low SES (regardless of ethnic background) do not have access to healthcare. Authors could further contribute to the literature if they describe how the local healthcare system tailors (or not) diabetes treatment to this particular ethnic group.

Major compulsory revisions

Manuscript has no page numbers.

Specific comments

Abstract

Methods. Not clear if they conducted a chart review, writing is hard to follow.

Results. The statement on overweight and obesity might be an overstatement of their results. Furthermore, it reads more like Discussion than Results.

Background

Paragraph 3, page 1. Guatemala is not unique in having a large percentage of indigenous population (e.g. Bolivia, Peru).

Authors contradict themselves. First they write that there’s no data on the prevalence of NCDs and their risk factors. However, they then write that NCDs are on the rise. This cannot be concluded if there’s no data. I suggest reviewing PAHO’s data on NCDs in Guatemala.

The reasons why indigenous people in Guatemala have no access to treatment are more complicated than just the MOH or private resources. I suggest the authors include a couple of sentences on the social and economical structure of
Guatemala.

Background reads like if the issue of lack to diabetes care is particular of rural Guatemala when in fact this is not the case. I suggest authors review PAHO and MOH data on what percentage of the population has access to care. I believe there’s also recently published data on access to medications (Anson et al) that could be cited here (even though not specific to diabetes).

Methods.

Given that the readership of the journal might not be familiar with Guatemala, more information on the municipalities are needed. How do they compare with each other? If available, authors could use the Human Development Index for comparison purposes. Do these municipalities have the same access to care? Number of physicians and nurses in each municipality would be good to know.

Readership might not be familiar with what Kaqchikel is, more detail is needed. Furthermore, if the interviewer was not a native Kaqchikel speaker, could this introduce any bias? Or if they used an interpreter?

Regarding the 5 major thematic areas, writing is misleading. What do they refer by “knowledge”? If not “knowledge”, what did they assessed in terms of diagnosis, treatment, diet and social support? What about prevention?

They need to describe how was name and patient identifier concealed.

Not very clear how the sample was recruited. They just write “snowball methodology”. What’s the population? Response rate? Door to door? At the clinic? Be specific as this might be a source of bias.

Results.

Table 1 is not needed as most of the results are also cited in the text. This should be avoided. I suggest authors use tables to save space in the text and avoid repeating what’s in the tables in the text. The percentage of diagnosis that was incidental might not be a that different from others. This should be adequately discussed in the Discussion section.

Last sentence of the “Cure” sub-section needs editing, hard to follow.

Even though most respondents were not aware of HbA1c, this might be expected if there’s no testing available in the community. Therefore their finding is not related to being Maya but to the healthcare system in Guatemala.

The “Costs” section is particularly useful. However, more background is needed. Besides out-of-pocket, what other sources of healthcare there are in these communities? The cost of a single vial needs to be placed in context and compare to the minimum daily wage or another commodity.

Second sentence of “The diabetic diets” also needs editing. In addition, there was still a 20% of respondents that had no dietary change.
According to the answers, fruits and vegetables costs was one of the barriers. This is surprising given the environment and climate in Guatemala. Authors need to further elaborate on this finding. Is it a matter of affordability or accessibility?

In the quantitative results, how many charts were reviewed in total? Last sentence of the second paragraph is hard to follow ("....clinic was 6 year"). The finding on alcohol and tobacco use should be placed in context (cite Sakhuja et al. on smoking prevalence in rural Guatemala). It should be clarified that this is medication prescription that does not exactly translate into consumption. Particularly if patients do not have insurance or costs of medications are high.

Clarify what they mean by “patients endorsed consumption”.

Glycosylated Hb levels need a unit of measurement. How does the 19% with appropriate control compares to other settings, either in Guatemala or elsewhere? Again, this issue might not be particular to Mayans or rural Guatemala.

Discussion
Should start with their main finding. Reads more like an Introduction with some Methods included.

I suggest authors place their findings in context with other rural communities, either in developing or developed nations.

First paragraph in the Conclusions needs editing. The second paragraph is not particular to Guatemala, authors need to place their findings in context.

Minor essential revisions
Lengthy, suggest removing the sub-titles.

Guatemalan guidelines also include screening and I suggest they review how this guidelines were developed.

Last two sentences of Introduction read more like Discussion

Be specific on what percentage of the interviews were conducted in languages other than Spanish.

The classification of “Maya” is still subject to debate and depends on how the question is asked. I suggest using the word “indigenous” and reviewing official data as I remember they represent less than 50% of the population in Guatemala.

How many of the interviews were actually recorded and why not record all of them?

In the “Treatment of Diabetes” (should be edited to “Diabetes Treatment”) section, more quotes might be good.
The fact that costs in treatments other than traditional Western medicine were more expensive is worth further comment in the Discussion.

What to they refer by “ethnomedical” practitioners?

Was there any mention of generic medications?

The paragraph on the informant (which I assume is the source of the flow diagram) needs editing. For example, it reads “…she initial sought..”. Should read “she first sought”.

Endnotes.

Minimum wage per year is not very useful for comparison in this study. I suggest they use daily minimum wage in rural Guatemala (this country has different minimum wage for the urban setting).

How did they validated medication consumption?

References are centered in Guatemala (and they still need to cite additional work in the country). However, research in other rural underserved communities should also be cited.

Most of the Tables are not needed as they are already cited in the text. I suggest including only 1 table with the basic description of respondents. Table 4 needs additional editing. What percentage of the sample had 0 years of schooling? Are these illiterate? Does the percentage of overweight includes the obese? In the medication section of Table 4, are these prescribed or actual consumption? Title in the table also needs editing and suggest including sub-titles.

Avoid repeating results in the Discussion section.

The 8% should not be cited as “relaxed index”. Use appropriate wording (e.g. conservative).

**Level of interest:** An article of importance in its field

**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 I have no competing interests