Reviewer's report

Title: Diabetes Mellitus in North West Ethiopia: a community based study

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Reviewer: Charles Agyemang

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Diabetes Mellitus in North West Ethiopia: a community based study

Major comments:

Abebe and colleagues’ study compared the magnitude and associated risk of diabetes mellitus between urban and rural adult residents in northwest Ethiopia. The authors found that the diabetes mellitus prevalence was considerably high in both urban and rural Ethiopia and it is largely undiagnosed and untreated, especially in the rural population. The authors therefore recommend that appropriate actions need to be taken to provide access to early diagnosis and treatment for people affected to reduce associated complications.

The authors can be congratulated for undertaking this important work in Ethiopia. This study will contribute to the emerging diabetes problem in the African region. Whilst I find this work very important, I think the analyses and the presentation could be improved. The authors should also provide data on important factors such as dietary behaviour, smoking, khat chewing, socio-economic status and how these relate to diabetes.

Introduction

- The introduction section could improve to bring out the relevance of this. The justification for carrying out this study is poorly laid out especially given the focus of this study. E.g. are there data on differences in diabetes between rural and urban Ethiopia? If not, then this, for example, should be the basis for this study. The authors need to justify why this study is needed in the introduction section.

Methods

- The authors should give information about how waist circumference as well as weight and height were measured including types of instruments used. How was BMI determined?

Results

The paper will improve if the authors stratify the analyses by sex. They have enough numbers to do this. This is very important because the mechanisms might differ by sex.

Please provide data on diet behaviour, smoking, shat chewing and
socioeconomic status between rural and urban men and women.

Tables.
- Provide extra table with characteristics of the study population stratified by sex and locality e.g. mean age, weight, height, BMI, and % of physical activity, family history of diabetes, smoking and alcohol consumption etc. This should be table 1.

- The previous Table 1 suggested ‘adjusted socio-demographic, life style, and anthropometric characteristics of variable associated with diabetes mellitus among urban and rural residence of Gondar, north west Ethiopia’. Adjusted for what? Again it is important to stratify the analyses by sex.

- Figure 1: Please provide data on men and women in rural and urban populations separately, and then total with appropriate 95% CIs.

- Figure 2: Please provide 95% CI for the figures as you have done for figure 1. Figure 2 is very interesting. It shows a massive difference between rural and urban from 55 years and above. What are the possible explanations for these differences? Please discuss this in the discussion section.

- Figure 3: please stratify the analyses by sex and provide 95% CIs.

Discussion:
- In the discussion section, the authors seem to attribute the strong relation between family history and diabetes to genetics. It is trickery to assume that this might be due to genetic predispositions. Behaviour within families are most likely to be the contributing factor to the strong association found between family history and diabetes in this study. This point should be discussed in this context.

- One of the main aim of this paper was to compare prevalence of diabetes between urban and rural population, but I missed discussions on the potential factors that might contribute to the observed differences between rural and urban. The analysis also fail to explore the potential factors. The authors should run logistic regression analysis with the total population to explore this.

- I miss discussion on the potential limitations on this study. There are several of them including e.g. this study is merely a cross-sectional and therefore the observed associations are not necessary causal. The predictors were based on self-report, which are subjected to reporting bias. There were no date on important factors such as dietary behaviour, smoking and SES. The authors need to discuss this important limitations in detail.

Minor
- Some of the references are in appropriate e.g. references 5-9 for studies on Ethiopian immigrants to Israel.

- There are typos in many places.
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

None