

# Review of: "Evaluation of Diabetes Risk Score Tool for Detecting Undiagnosed Type 2 Diabetes Mellitus in Referral Clinics at Primary Health Care Centers in Sudan"

Bien Aimé Mandja<sup>1</sup>

<sup>1</sup> Université de Bandundu Ville

Potential competing interests: No potential competing interests to declare.

## Reviewer's Comments

### I. Title

1. According to the STROBE Statement, the authors must indicate the study's design with a commonly used term in the title. Please complete it.

### II. Abstract

2. Give a short description of the DRS tool in the methods.

### III. Introduction

3. On page 2, paragraphs 2 and 3, we don't understand why you've given the prevalence of diabetes only for the states of Khartoum and Gadarif. What is the situation in the other states? You should have shown us all the states in Sudan that are most affected by diabetes, including Khartoum and Gadarif. Please complete this section.

4. On page 2, paragraphs 2 and 3, the authors mentioned that the implementation of the Package of Essential Non-communicable Disease Interventions (PEN) at the primary care level includes recommendations for the screening of individuals older than 40 years. I suggest listing these interventions before continuing. Please add a sentence.

5. On page 3, at the beginning of paragraphs 2, the authors mentioned that several potential approaches are available to screen for diabetes. Please list the most important approaches and give the advantages and disadvantages of each in the Sudanese context. This will help readers understand why you want to use this new tool in Sudan.

6. On page 3, at the beginning of paragraphs 3, the authors mentioned that Sudan still lacks early detection and prevention strategies. You cannot say that because there's no lack of strategy - it's there, but it has its weaknesses, as you'll explain in the next section. Please reformulate this part.

7. After the aim statement, it would be nice to complete the section with a statement showing the importance of this study.

One (or not more than two) sentences can easily present the importance.

## IV. Methods

### General comments

8. This section is named methods or materials and methods, not methodology. Furthermore, this section is made up of the following sub-sections:

- **Study design**

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- 9. Please separate the key elements of study design in what you called setting.

- **Setting**

- 10. Rewrite the setting as follows: presentation of surface area, population (indicating source) and density of Sudan. How is Sudan organized administratively? What are the common pathologies in Sudan? What are some Sudanese habits that predispose them to diabetes? You'll need to add an administrative map of Sudan here, as some non-African readers don't know where Sudan is located.

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- **Study population and sampling procedures**

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- 11. Please separate the elements of study population and sampling procedures in what you called setting.

- **Data collection procedures: OK**

- **Variables (dependent and independent variables)**

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- 12. Please create a sub-section in which you presented only dependent and independent variables.

- **Data analyses: OK**

- **Ethical considerations: OK**

9. In the selection of 74 RPHCCs, the criteria were RPHCCs that have a high attendance rate and provide an advanced package of services. However, the definition of high rate remains open and can vary across readers!!! Please precise.

14. Add at least a reference to the sample size formula for calculation of sample size in a cross-sectional study.

15. Nowhere in the methodology did the authors mention whether they had pre-tested the DRS tool before using it. If they had, then how?

16. In the methods, it is not clear how the authors performed the sensitivity analysis. Please rewrite this part.

17. As the authors have only used proportions, I ask them to compare the proportions statistically using Fisher's exact test. In addition, they need to add confidence intervals for each calculated proportion.

## **V. Results**

18. Since you've used a single continuous quantitative variable, age, calculate the mean and median of this variable.
19. In the title of each table and graph, add the study period.
20. For each table, add the confidence intervals for each percentage presented.

## **VI. Discussion**

21. Discuss the strengths and limitations of your study.

## **Conclusion of review**

Major revisions