Author’s response to reviews

Title: GLYCAEMIC CONTROL IN TYPE 1 DIABETES MELLITUS AMONG CHILDREN AND ADOLESCENTS IN A RESOURCE LIMITED SETTING IN DAR ES SALAAM – TANZANIA

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Author’s response to reviews:

Reviewer #1:

The manuscript is very fine and clear for understanding.

Below are some comments which I suggest in addition.

As background stated ADA recommendations for HbA1c for different ages (line 35-43), the results should have age distributed analysis due to different cut offs for HbA1c values for different ages.

There is an age distributed analysis for mean HbA1C. Results line 28 to 32

There is no overall comparison of mean HbA1c for different age categories, their normal ranges are different for age categories. (Results line 4-9)

we have done a mean HbA1C comparison for different age groups (table 2: results line 28 to 32). We chose the age groups as less than 10 years, 10 – 14 years and greater than 14 years. This was because there were very few children (only 3) who were less than 6 years, therefore using the ADA age categories would not be practical.
Complications like retinopathy, nephropathy and neuropathy should be added (If available).

In this study, we did not look at the complications; however the prevalence in this population has been described before (background line 20 – 23)

Diabetes knowledge scores should be added for children /adolescents and caregiver
diabetes knowledge scores for adolescents and caregivers were both assessed as independent variables and therefore could not be added

Multivariate analysis shows that diabetes knowledge of caregiver is negatively (non significant) associated with glycemic control? Can we correlate diabetes knowledge with caregiver basic education? If yes, it could be adjusted in multivariate analysis.

Caregiver level of education was not significantly associated with glycaemic control hence we did not correlate that with knowledge scores and it was not included in multivariate analysis

Reviewer #2:
Noorani and colleagues conducted an important study in children and adolescents with type 1 diabetes in a resource limited setting. This study is generally well presented but requires major revisions for improvement.

General comments
1. All references in text should be done with square brackets: "[ ]" as per journal reference format.
done

2. The authors in the manuscript have well defined cutoff for normal HbA1c according to age in children and adolescents. It would have been interesting that the authors research the factors associated with glycemic control using univariable and multivariable binary logistic regression, using cut-offs they have defined for the dependent variable.
Since the dependant variable (HBA1C in this case) is a continuous variable, the agreement with the statistician was that we should use linear regression for analysis. If we consider it a binary variable using the cutoffs for normal, (that means classifying it as well controlled vs poorly controlled), a lot of information within those 2 groups would be lost and not accounted for.

Specific comments

3. Title page. The first author should give only one e-mail address.
Second address removed

4. Abstract. Method. "Glycemic control was assessed by measuring glycosylated hemoglobin". Authors should precise that this 'A1C' glycosylated hemoglobin.
included

5. Abstract. Method. Authors should precise in Methods that they have used linear regression model to analyze factor associated with glycemic control.
included

6. Introduction. Page 4. Line 7 -17. The data reported here are very old. The authors must have given data older than 10 years so that readers have a better contextual overview of the burden of type 1 diabetes.
Agreed, old data but no recent publications about disease burden

7. Introduction. Page4. Line 46-49. Please, fully describe the population in which this study has been conducted.
Described in the text. Children aged between 5 and 18 years attending the same clinic as the one in which our study has been carried out.

8. Results. Authors must choose one format with which they report the results. Either a decimal or two decimal places, not both.

Changed to one decimal.

9. Table 3. Authors should define DM and BGM in footnotes of the table.

defined.

10. Table 3. There are two "Adherence to BGM regimen (poor/good)".

In univariate analysis, mean HbA1c was significantly lower in those with average adherence as compared to those with poor adherence. (now included in text). In multivariate analysis, adherence to BGM was converted into 2 binary variables.

11. Add axes' name for figure 1.

added.

12. Results. Line 42-52. This should be stated in Methods section.

stated.

13. The first paragraph of the Discussion section should state results related to objectives.

stated.

14. Discussion. Page 16. Line 46-53. Authors should explain in more detail, the reasons for poor glycemic control in adolescents. Authors should name the hormones they are talking about and give the physiological and pathophysiological mechanism.
Also, what is the pathophysiological mechanism of social and psychological stress which generates the low-glycemic control in adolescents?

Replace "pubertal hormones" by "sexual hormones". Written like this, it seems that there are specific hormones for puberty.

explained further

15. Discussion. Page 17. Line 32-37. The authors should why in this study duration of DM was not an independent factor of glycemic control i.e. what is the difference with others reports.

explained


added

17. Discussion Page 17. Line 50-52. I think that the authors should not explain the absence of difference with "It could be explained by the poor adherence in our diabetic population." Which adherence authors are talking about? Adherence to blood glucose monitoring? Adherence to insulin regimen?

Explained further

18. This study have cross sectional design. This is not the best method to demonstrate relationship between two variables. Authors should it as limitation.

included