Author’s response to reviews

Title: Evaluating the effectiveness of opportunistic eye screening model for people with Diabetes attending Diabetes clinic at Mnazi Mmoja hospital, Zanzibar

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Version: 3
Date: 13 May 2014

Author’s response to reviews: see over
Reply to the reviewer’s comments:

We thank reviewers for their valuable comments. All changes are in the red color font in the revised manuscript.

Reviewer 1

Comment 1: The paper has quoted different cut off visual acuity levels for blindness. It has been stated as <6/60 in the abstract and as < 3/60 in subsequent discussions. The visual acuity has been defined as “presenting visual acuity” and not “best corrected visual acuity”. For example a high myope with visual acuity of 3/60 would be categorised as blind though it is just a refractive error. Best corrected visual acuity would be the ideal way to represent visual acuity.

Reply: We have considered visual acuity of less than 3/60 as blindness. The value in the abstract of 6/60 is a typographical error. It has been corrected in the revised manuscript. (Page no2, Para 2, line 9)

We have collected presenting visual acuity in the study as the study was conducted in a diabetes clinic setting. Refraction was not done in the diabetes clinic. Hence we presented only data of presenting visual acuity of the study participants.

Comment 2: The classification of fasting blood sugar levels has excluded many values eg between 5-6 and 9-10. Conventionally, these results are reported in single decimal figures. Where will a patient with a blood sugar of 5.5 mmol/l be included? (Page 6 of the paper - normal 4 -5 mmol/l, high 6 – 9 mmol/l and very high 10 mmol/l). In the final tables, patients have been divided into just normal and high for analysis. Suggest altering the write up so that all values are included and the classification is just into normal and high.

Reply: The suggested changes have been incorporated in the manuscript (Page no 6, Para1, line 4-5). All values are included and classification is done as normal and high.

Comment 3: Blood pressure levels and categorisation also does not include a continuous spectrum. Once again blood pressure values between 120- 130mm Hg systolic and 80 to 90mm Hg diastolic have been neglected.

Reply: The suggested changes have been incorporated in the manuscript (Page no 6, Para 1, line 5-7 ). Blood pressure was classified as presence of hypertension ≥ 140/90 mm of Hg and absence of hypertension when blood pressure is within normal limits (120/80 – 110/75 mmHg).

Comment 4: The study has not specified any exclusion criteria. It is difficult to understand whether conditions like shallow anterior chambers, small pupils and significant cataract (other than the four dense cataract patients) which would prevent
assessment of posterior segment were not present in any of the recruited patients.

Reply: The study exclusion criteria were those who are not willing to participate in the study/ critically ill. All recruited patients were referred to eye clinic where in patients were examined under slit lamp and indirect opthalmoscopy to detect all diabetic eye diseases. We did not encounter shallow anterior chambers and small pupils in this current study sample. Significant dense cataract was noticed in four patients.

Comment 5: In page 2, under the results, it is indicated that a total of 356 patients were recruited. In the subsequent line, it is mentioned that 231/365 patients had eye problems. There is a discrepancy in the number quoted.

Reply: We are sorry for the typographical error. The number has been revised correctly (Page no 2, Para 3, line 3).

Comment 6: The clinical examination has included anterior segment examination with slit lamp. The paper could have used retinopathy screening by slit lamp with indirect ophthalmoscopy with 78D/90D lens instead of 20D lens as the grading would be more accurate. Indirect ophthalmoscopy with 20D for screening of diabetic retinopathy have been reported as an acceptable method in developing countries with limitation of infrastructure. Indirect ophthalmoscopy with 20D combined with direct ophthalmoscopy for detecting presence of macular edema would make the categorisation more accurate, if the usage of slit lamp is a limitation. However, in this study the infrastructure did use a slit lamp for anterior segment examination.

Reviewer 2 comment 2:

2) Pg 6, Line 22: Fundus examination using a 20D lens and indirect ophthalmoscopy perhaps may not be the best way to examine the retina for neovascular changes, and would, in my opinion, severely underestimate the incidence of mild NPDR as well as diabetic macular oedema. This is a significant limitation of this study, and should at least be recognized as such. While this may be understandable given the constraints placed by resources, perhaps a more feasible alternative might have been to use slit-lamp biomicroscopy with a 78D lens to examine the posterior pole in addition to the BIO examination.

Reply: We agree with the reviewers comment. We could not do the 78 D lens examination by cataract surgeon due to resource and training constraints. We mentioned this lack of 78 D examination as a significant study limitation in the revised manuscript. (Page no 13, Para 2, line 8-10).
Reviewer 2 comments

Comment 1:

1) Pg 6, Line 1: Systemic parameters such as blood sugar levels, BP, BMI etc were measured and recorded as part of the study and it is well established that raised BP and obesity are found in tandem with diabetes. For the purpose of this paper, it would perhaps be more instructive to attempt to correlate these with the incidence or severity of diabetic retinopathy rather than to simply document that they co-exist in diabetic patients.

Reply: We agree with the reviewer regarding the importance of correlating important risk factors like blood pressure, blood sugar, BMI and its correlation with Diabetic retinopathy. We have done this and presented in the table 3 as multiple logistic regression analysis.

3) Pg 7, Line 19: There is no mention in either the Methods Section or the Results Section how these 356 subjects were recruited. Was this an entirely random process? Were all 967 patients who attended at the Diabetes clinic approached for enrollment? This would shed some light on any recruitment bias in this study.

Editor's Comments:

"The authors attempt to describe the effectiveness of diabetic eye screening compared to self-reporting at one ophthalmic centre over 1 month. The patients were chosen randomly for this study. The methodology requires explanation for the use of random patients and how they were 'randomly' chosen to justify the lack of bias.

Reply: The subjects were randomly recruited at the exclusive diabetic outpatient’s clinic at the Mnazi Mmoja Referral Hospital. The investigator approached all the patients attending the diabetic clinic during the study period daily and explained about the study. All those consented to participate in the study was further interviewed before the eye examination. All those diabetic patients who were not interested to participate and who was seriously ill and had difficulty to move to the eye clinic for examination was excluded from participation. (Page 5, para 3 and Page 6, Para 1)

4) Pg 8, Line 17: ‘A total of 206/356 (57.9%) subjects reported having experienced eye problems at the time of the interview’. There is no mention of what these ‘eye problems’ constitute. This information is presumably obtained from the patients’ questionnaire, and it would have been helpful to have included the questionnaire as an addendum to the manuscript.
Reply: We did not collect any information regarding the type of eye problems. The patients were only asked whether they had experienced any eye problems in the past or not.

5) Pg 9, Line 1: 'Cataract was diagnosed in 178 eyes and high IOP > 21 mmHg in 59 eyes.' Again, a classification of the severity of the cataracts, and the extent of glaucomatous optic neuropathy encountered should be specified.

Reply: Classification of the severity of the cataracts and the grading of extent of glaucomatous optic neuropathy was not done.

Additional Editor's Request:

(1) Competing Interest

- Please be advised that manuscripts must include a ?Competing interests? section. This should be placed after the Conclusions/Abbreviations. If there are none to declare, please include the statement ?The authors declare that they have no competing interests.? Please consider the following questions and include an appropriate declaration of competing interests in your manuscript:

Financial competing interests
? In the past five years have you received reimbursements, fees, funding, or salary from an organization that may in any way gain or lose financially from the publication of this manuscript, either now or in the future? Is such an organization financing this manuscript (including the article-processing charge)? If so, please specify.
? Do you hold any stocks or shares in an organization that may in any way gain or lose financially from the publication of this manuscript, either now or in the future? If so, please specify.
? Do you hold or are you currently applying for any patents relating to the content of the manuscript? Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript? If so, please specify.
? Do you have any other financial competing interests? If so, please specify.

Non-financial competing interests
? Are there any non-financial competing interests (political, personal, religious, ideological, academic, intellectual, commercial or any other) to declare in relation to this manuscript? If so, please specify.

Reply: We have incorporated the necessary statement in the revised manuscript.