PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Glycaemic, blood pressure and low-density lipoprotein-cholesterol control among patients with diabetes mellitus in a specialised clinic in Botswana: a cross-sectional study
AUTHORS	Mwita, Julius; Francis, Joel; Omech, Bernard; Botsile, Elizabeth; Oyewo, Aderonke; Mokgwathi, Matshidiso; Molefe-Baikai, Onkabetse; Godman, Brian; Tshikuka, Jose- Gaby

VERSION 1 – REVIEW

REVIEWER	Shaun Lee Wen Huey
	Monash University Malaysia, Malaysia
REVIEW RETURNED	28-Sep-2018

GENERAL COMMENTS	Overall, the authors have examined the prevalence of BP, glycaemic and lipid control in their population with type 2 diabetes. I applaude the authors for attempting this. Some suggestion for improvement
	1. The study looks more of an audit of their practice rather than prevalence. I suggest the authors word it this way since its not really a prevalence but an audit of their practice
	2. There is a need to include what was the response rates. The authors mentione that they will include 10 patients per day and was done over 7 months. Assuming there are 24 working days a month, there should be 1680 participants.. but only 500 reported. Is this representative
	3. Some comparison of those attending the clinic since 1 in every 8 were recruited should be good so we can know how representative the data is
	4. I suggest the authors to give us an idea of why was there poor uptake of insulin. Similar with other drugs which dont follow guidelines
	5. Some limitations I have identified should be included.

REVIEWER	Haitham Shoman
	Harvard Medical School, Boston, MA, USA
REVIEW RETURNED	22-Jan-2019

GENERAL COMMENTS	Very well written article and use of the STROBE checklist. Answers a very important topic in a rather neglected place. Very well done work by the authors! Few minor revisions: Line no. 33 (page 1 abstract): It seems the authors meant to say: These finding call for … Line no. 27 (page 3 article): correction to be made in: sub-Saharan African Line no. 33 (page 3): correction: The study also assessed for (remove the word for)

REVIEWER	Chiara de Waure
	University of Perugia, Italy
REVIEW RETURNED	27-Feb-2019

GENERAL COMMENTS	The statistical approach is clear but there are few minor points that should be addressed: - I would encourage the Authors to describe how they assessed the goodness of fit of the model and to elaborate on the limits of evaluating associations in a cross-sectional study. - Educational level satisfies the criteria for entering the multivariabile analysis, but it does not appear among variables used in making adjusted estimations. - P- value should be reported in bold if significant. - The reference category is reported only for some variables. In the sake of clarity I would report it for all variables alongside with "1" in order to label it as reference category.

REVIEWER	Chris Guure
	University of Ghana, School of Public Health
REVIEW RETURNED	01-Mar-2019

GENERAL COMMENTS	The topic "Glycaemic, blood pressure and low-density lipoproteincholesterol control among patients with diabetes mellitus in a specialised clinic in Botswana" is of great importance and a public health issue. I have reviewed the statistical analysis part of the manuscript and think is well described and well carried out. I have just a few concerns. 1) There should be some level of consistency in writing out the results, for instance, page 1, line 25 confidence interval and line 29 do not match. 2) Page 4, line 29. The mean (SD) HbA1c was 8.4 (2.4) % overall. The percentage symbol attached to what is supposed to be the standard deviation (2.4)% makes it confusing. Authors should clearly indicate what that is...Similar reporting runs across. 3) From tables 2 to 4, adjusted ORs as well as their confidence intervals and p-values were not reported for some of the variables? What is the reason?

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

• Reviewer comment 1.1: Overall, the authors have examined the prevalence of BP, glycaemic and lipid control in their population with type 2 diabetes. I applaud the authors for attempting this. Some suggestion for improvement
Authors' Response: We appreciate the encouraging comments and suggestions to improve the manuscript.
• Reviewer comment 1.2: The study looks more of an audit of their practice rather than prevalence. I suggest the authors word it this way since its not really a prevalence but an audit of their practice.
Authors' Response: We are thankful for this helpful comment and agree that the study was an audit of our practice. The levels of hypertension, LDL-C and glycemic control in our participants are reported as proportions, hence the reason for the word prevalence. We have, however, incorporated the reviewer's comment in the manuscript.
• Reviewer comment 1.3: There is a need to include what was the response rates. The authors mentioned that they will include 10 patients per day and was done over 7 months. Assuming there are 24 working days a month, there should be 1680 participants but only 500 reported. Is this representative
Authors' Response: The reviewer makes an important observation on our recruitment period. We apologise for overlooking this practical information in our initial submission. We have clarified it in the revised manuscript. The response rate was 97%, as only 17 (3.4%) of the approached participants declined participation because of time constraints. We could not include all patients in the study due to limited resources. We planned a daily enrolment of ten randomly selected patients (every 8th patient in the list) if 80 patients attended the clinic each day. However, there was a daily and monthly variation of the number of clinic attendees. As the representativeness of a study mostly depends on how participants were selected and/or whether characteristics of the study sample reflect those of the population where they come from, we maintained our sampling strategy of every 8th patient in the list regardless of the number of daily clinic attendees. Consequently, the number of enrolments varied each day, explaining the longer duration of data collection. The sample size of 500 patients was optimal to pick up the study event of interest if one truly existed.
• Reviewer comment 1.4: Some comparison of those attending the clinic since 1 in every 8 were recruited should be good, so we can know how representative the data is:
Authors' Response: We express gratitude to the reviewer for this comment. The information for those attendees who were not enrolled is not available for comparison. While we agree that it would have been a great idea to compare the two groups - a random sampling strategy ensured the recruitment of a fairly representative sample.
• Reviewer comment 1.5: I suggest the authors to give us an idea of why was there poor uptake of insulin. Similar with other drugs which don't follow guidelines
Authors' Response: We are appreciative to the reviewer for this valuable comment. Although the scope of this study was not to explore the reasons for the poor uptake of guideline-recommended drugs in our participants, our postulate (included in our discussion) was that clinician might have inertia in initiating injectable medications. We will be following this up in future studies
• Reviewer comment 1.6: Some limitations I have identified should be included
Authors' Response: We appreciate the reviewer's comment and we have included the suggested potential limitations in the revised manuscript.

Reviewer 2

• Reviewer comment 2.1: Very well written article and use of the STROBE checklist. Answers a very important topic in a rather neglected place. Very well done work by the authors! Few minor revisions:

Authors' Response: Thank you for these encouraging words and important comments

• Reviewer comment 2.2: Line no. 33 (page 1 abstract): It seems the authors meant to say: These finding call for …

Authors' Response: We apologise for the typographic error. We have reviewed the whole manuscript and corrected similar errors. The sentence now reads "These findings call for urgent individual and health systems interventions to address key determinants of the recommended therapeutic targets among patients with diabetes in this setting".

• Reviewer comment 2.3: Line no. 27 (page 3 article): correction to be made in: sub-Saharan African

Authors' Response: We regret this additional typographic error. We have corrected the phrase from sub-Saharan Africa countries to sub-Saharan African countries.

• Reviewer comment 2.4: Line no. 33 (page 3): Correction: The study also assessed for (remove the word for)

Authors' Response: We have corrected the mistake and improved the sentenced as recommended.

Reviewer 3

• Reviewer comments 3.1: The statistical approach is clear but there are few minor points that should be addressed:

Authors' Response: Thank you for these encouraging words and valuable comments

• Reviewer comments 3.2: I would encourage the Authors to describe how they assessed the goodness of fit of the model and to elaborate on the limits of evaluating associations in a cross-sectional study.

Authors' Response: We are grateful to the reviewer for this comment. We used the Hosmer-Lemeshow goodness-of-fit test to assess how well the data fit the model. Our models had the goodness of fit. This information is now included in the revised manuscript.

• Reviewer comments 3.3: Educational level satisfies the criteria for entering the multivariable analysis, but it does not appear among variables used in making adjusted estimations.

• Authors' Response: We appreciate the reviewer's comment and agree that 'primary education' satisfied the criteria for entering the multivariable analysis. As other categories did not meet the entry criteria, we decided to look at the overall p-value of education in the univariate analysis which was insignificant (p= 0.229 in glycaemic control, p= 0.9620 for hypertension and p =0.292 LDL-C control). We, therefore, did not include the education status into the final models.

• Reviewer comments 3.4: P-value should be reported in bold if significant.

Authors' Response: Thank you for this useful suggestion. In the revised manuscript, all significant p-values are in bold.

• Reviewer comments 3.5: The reference category is reported only for some variables. In the sake of clarity, I would report it for all variables alongside with "1" in order to label it as reference category.

• Authors' Response: Thank you for this critical observation. We have corrected it now and reported all the reference groups, as per your recommendation.

Reviewer 4

• Reviewer comments 4.1: The topic "Glycaemic, blood pressure and low-density lipoprotein cholesterol control among patients with diabetes mellitus in a specialised clinic in Botswana" is of great importance and a public health issue. I have reviewed the statistical analysis part of the manuscript and think is well described and well carried out. I have just a few concerns.
Authors' Response: Thank you for these encouraging words and vital comments.

• Reviewer comments 4.2: There should be some level of consistency in writing out the results, for instance, page 1, line 25 confidence interval and line 29 do not match.
Authors' Response: We appreciate the reviewer for this suggestion. We have reviewed the manuscript and to ensure consistency in our reporting. This included the use of two decimal places in reporting odd ratios.

• Reviewer comments 4.3: Page 4, line 29. The mean (SD) HbA1c was 8.4 (2.4) % overall. The percentage symbol attached to what is supposed to be the standard deviation (2.4)% makes it confusing. Authors should clearly indicate what that is...Similar reporting runs across
Authors' Response: We apologise for the confusion. The intention was to present mean, followed by SD and units afterwards. We have corrected this and all similar errors, in the sentence. The sentence now appears as "The mean (SD) HbA1c was 8.4 % (2.4) overall, 8.6% (2.7) for female and 8.0% (1.6) for male patients (p=0.199)".

• Reviewer comments 4.4: From tables 2 to 4, adjusted ORs, as well as their confidence intervals and p-values, were not reported for some of the variables? What is the reason?
Authors' Response: We thank the reviewer for these questions. We reported adjusted ORs for the variables that were entered in multivariate logistic regression models (i.e. variables with a p-value <0.2 in univariate logistic regression analysis). We apologise for not including CKD in the model for LDL-C control despite a p-value of 0.193. We have now added it to the model, with little change in AORs. The exclusion of education level is explained in comment 3.3 above.

VERSION 2 – REVIEW

REVIEWER	Shaun Lee Wen Huey Monash University Malaysia
REVIEW RETURNED	11-Apr-2019

GENERAL COMMENTS	I believe that the authors have address most of the concerns. However, there appears to be a lack of discussion on the limitations of this study. I believe that having these would provide readers of the journal with a clearer interpretation of sosme of the limitations and the need to interpret these results with some caution. As it is, it would appear that these are representative of the whole country which I do not think so. The sampling frame, methodology has some limitation. Similarly, the total sample size issue has not been adequately explained as the rough estimation doesnt tally. Can these be explained clearly in the paper?

REVIEWER	Chris Guure University of Ghana, School of Public Health. Ghana
REVIEW RETURNED	04-Apr-2019

GENERAL COMMENTS	The reviewer completed the checklist but made no further comments.

Reviewer: 1

•Reviewer comment 1.1: I believe that the authors have addressed most of the concerns. However, there appears to be a lack of discussion on the limitations of this study. I believe that having these would provide readers of the journal with a clearer interpretation of some of the limitations and the need to interpret these results with some caution. As it is, it would appear that these are representative of the whole country which I do not think so. The sampling frame, the methodology has some limitation. Similarly, the total sample size issue has not been adequately explained as the rough estimation doesn't tally.

Authors' Response: We thank the reviewer for time and efforts to improve our manuscript. We acknowledge the limitations as pointed out by the reviewer. We have now included them as an additional limitation and provided further explanations.

oAs previously explained, we maintained our sampling interval of every 8th patient in the clinic attendance list despite the daily variations of the clinic attendees. Before conducting the study, we calculated the minimum sample size (500 participants) that was needed to estimate our outcomes of interest. Through systematic sampling, we enrolled 500 participants between August 2017 and February 2018. As the study was performed in the last quarter of the year, some months had fewer attendees leading a prolonged enrolment period to achieve the pre-calculated sample size of 500 participants. We acknowledge and mention the possibility of selection bias that might have arisen due to our sampling approach.

oBeing a single-centre study, we do agree with the reviewer that our findings may not be generalised to all the clinics in the country but may be representative of participants seen in the specialised clinics. We have elaborated this in the manuscript.

•Again, we thank the editors and reviewer for recommending our manuscript for publication. Their comments have significantly improved the manuscript