Author’s response to reviews

Title: Practice scope and job confidence of two-year trained optometry technicians in Eritrea

Authors:
Rajendra Gyawali (gyawali.rajendra@gmail.com)
Bharat Bhayal (optometristbharaty@gmail.com)

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Practice scope and job confidence of two-year trained optometry technicians in Eritrea

Rajendra Gyawali, FAAO, MOptom; Bharat Kumar Bhayal, MOptom

BMC Medical Education

Rajendra: Thank you for the opportunity to revise our manuscript “Practice scope and job confidence of two-year trained optometry technicians in Eritrea”. We appreciate the careful review and constructive suggestions from the editorial team and the reviewers. We believe that the manuscript is substantially improved after making the suggested edits.

In this document are the editor and reviewer comments with our responses, including how and where the text was modified. Changes made in the manuscript are marked using track changes. The revision has been developed in consultation between the co-authors, and each author has given approval to the final form of this revision.

Thank you for your consideration.

Reviewer reports:

Upreet Dhaliwal (Reviewer 1): The authors of "Practice scope and job confidence of two-year trained optometry technicians in Eritrea" have done a good job of tracking trainees and collecting data about their practice.

There are a few areas of concern that I would like to highlight:
1. The manuscript requires a bit of grammar and syntax editing.

Response: Thank you reviewer for the comment. We have thoroughly revised our manuscript and addressed all identified grammar and syntax errors. The revised manuscript was also proofread by a native English speaker. We believe that this has improved the quality of our paper.

2. In the abstract, and in the final conclusion, the authors say: "With better facility, improvement in infrastructure and further education and career opportunity, the two year trained OTs could be better utilized in the Eritrean eye care system." This is a speculation since you haven't tested it. Please consider using the words Possibly or Perhaps or Might to indicate the fact that you can't say for sure, based on your results, if it will work.

Response: Thank you reviewer for your comment. We acknowledge that the statements were more of our assumptions. We have edited the text to reflect this speculation.

3. In data analysis, the authors say "The confidence score for each of 5 domains were calculated as the percentage score of total category value (number of skills assessed multiplied by 3 for each skill)." This is difficult to understand - why was it multiplied by 3?

Response: This was done to get the percentage score out of maximum possible score in each domain. 3 represents the maximum score possible for each item, and this was multiplied by the total number of items in each domain to get Domain Maximum Score. For example, refraction domain contained 5 items and thus the maximum score was 3*5=15. If an OT scored aggregate 7 in this domain, the domain percentage score would be 7/15=46.7%.

We have added further explanation to clarify our calculation method.

4. The authors have proposed to analyse the data using Pearson's correlation, Student T-test and ANOVA (Pearson's correlation coefficient was to assess the relationship between the category confidence score and age and duration of active job, whereas student t test was used to calculate the difference in score in between different sex and one-way ANOVA for current location (Zoba) groups. A p-value less than 0.05 is considered statistically significant) yet no analysis results are shared or discussed. I suggest that the study could be presented as a descriptive one rather than an observational one.
Response: Thank you reviewer for the comment. We concur that the study is of a descriptive nature. We have presented the study design as a cross-sectional descriptive survey. However, we also attempted to analyse the associations between our outcome of interest (job confidence) and participant characteristics. As no statistically significant differences were observed (except for age and dispensing scores), we did not include this in the prior manuscript.

We have now included statements to present the positive association between age and dispensing score; and the lack of other relationships.

5. In the results, the authors state "Presbyopia and myopia were reported to be the commonest refractive error seen". Presbyopia is a failure of accommodation and not a refractive error - please amend throughout the manuscript.

Response: Thank you reviewer. We acknowledge that Presbyopia is not a refractive error. We have edited the text in our manuscript to clarify the meaning.

6. In the discussion, the authors list the limitations of the study right in the beginning. It might be better to list them after discussing the findings so as not to throw off the reader.

Response: Thank you reviewer for your suggestion. The purpose of placing the study limitation at the beginning of the discussion section was to make readers cautious while interpreting the findings from this survey. We understand that this may deter the reader from further exploring our discussion and conclusion. Considering this, we have summarised the aim of our study and highlighted the strength of our study at the beginning of the paragraph.

We believe that this balanced approach will keep the reader engaged while being aware of the limitations.

7. The entire second paragraph of the discussion ("The diploma level course enrolls students ....") belongs in the methods section where the enrolled sample is described. Table 4 should really be table 1, in that case.

Response: Thank you reviewer for suggesting this revision. We accept that this paragraph is more of a description of the study participants than a discussion of the study findings. As this paragraph’s objective is to introduce the program to the reader, we believe that this section is best suited in the introduction section.

We have changed the table number accordingly.
8. Reference number seven (Asmara College of Health Sciences. Curriculum for diploma in optometry technicians. Asmara, Eritrea 2009.) has spelling mistakes and does not indicate where the reference can be sourced.

Response: Thank you reviewer for the observation. We have rectified the error. As this reference is not available online, we are requesting the editors to see how this fits with journal format.

9. References need attention. Some article titles are in sentence case and others in sentence case. Please check journal style guidelines and amend.

Response: Thank you reviewer for the comment and we apologize for the errors. We have updated the reference with some new additions. The references now fit with journal style.

10. The authors mention Zoba several times in the text. It might be a good idea to explain to the reader (the first time it is mentioned) about its significance to the study.

Response: Thank you reviewer for this comment. Zobas (the regions) are the primary geographical divisions through which the country is administered. There are 6 Zobas and 58 districts. We have added text methodology section (second paragraph) to explain Zoba.

11. Tables should be stand-alone. Please expand abbreviations in the footnotes

Response: Thank you reviewer for this comment. We have added all the necessary information in the respective tables.

12. Similarly, the table titles (all tables, where required) and column headers (Table 2) could be a bit more descriptive to aid understanding.

Response: Thank you, reviewer. We have revised our tables to make them clearer. We have edited table 2 (now table 3) and removed the patient characteristics part, most of which is presented in the text.

We believe that these changes have made the tables clearer and more meaningful.
Reviewer 2 comments:

1. In the first paragraph of the Background, the authors should report the latest statistics on blindness estimates from Lancet under the Global Health issue published in 2017, which is the most recent publication. It says the prevalence of blindness is reduced from 39 million to 36 million.

Response: Thank you reviewer for your advice. We have revised our manuscript to include the latest data from the Lancet.

2. In Methodology: Line 4 in the first paragraph, insert "in".

Response: We apologize for this error. We have now corrected this.

3. When it comes to the statistical analysis:

   (i) the authors should have also done regression analysis in addition to the correlation analysis, and

Response: Thank you reviewer for the comment. Our study is more of a descriptive nature and the primary objective was to describe a cross-sectional report on the current status of the OTs and their confidence levels. However, we also attempted to analyse the associations between our outcome of interest (job confidence) and participant characteristics. As no statistically significant differences were observed (except for age and dispensing scores), we did not include this in the prior manuscript.

   (ii) the authors have mentioned that correlation analysis has been done, but the results were not described. When the data on confidence has been grouped into two categories (i.e., no confidence and full confidence), ideally a logistic regression model should have been utilized for such an outcome measure evaluation, adjusting for factors such as age (either continuous or grouped into category), gender (male vs female), duration of job (either continuous or grouped into category of years) and location in the multivariable model.

Response: In response to your comment, we ran a logistic regression analysis with confidence in each skill as dependent variable and age (continuous), sex (categorical), active job duration (continuous) and current Zoba (categorical) as independent variables. However, we did not
observe any statistically significant relationship except for the relationship between age and dispensing skills. With increasing age, the odds of being confident in the dispensing skills increased significantly (single vision dispensing OR=1.4, CI:1.1-1.9; complex single vision dispensing OR=1.3, CI:1.1-1.7; bifocal dispensing OR=1.4, CI:1.1-1.9; and progressive spectacle dispensing OR=1.3, CI:1.1-1.7).

We have now included statements to present the positive association between age and dispensing score; and the lack of other relationships.

4. In the results section, the data in Table 1 have a few errors in reporting in it. For example, in Table 1, for location Maekel the correct estimate should be 1:25026, for location Gash Barka it should be 1:78756, and the North R Sea area should be 14 and not 13. Similarly the total should be 74 and not 72 OTs.

Response: Thank you reviewer for your keen observation and we apologize for the errors.

We have corrected the errors in this table (now table 2). The total required number of the OTs for the whole population is 73 (in the last column/last row).

ADDITIONAL REQUESTS/SUGGESTIONS:

1. The authors should report the regression model results.

Response: Thank you editor for the comment. Our study is more of a descriptive nature and the primary objective was to describe a cross-sectional report on the current status of the OTs and their confidence levels. However, we also attempted to analyse the associations between our outcome of interest (job confidence) and participant characteristics. As no statistically significant differences were observed (except for age and dispensing scores), we did not include this in the prior manuscript.

We ran a logistic regression analysis with confidence in each skill as dependent variable and age (continuous), sex (categorical), active job duration (continuous) and current Zoba (categorical) as independent variables. However, we did not observe any statistically significant relationship except for the relationship between age and dispensing skills. With increasing age, the odds of being confident in the dispensing skills increased significantly (single vision dispensing OR=1.4, CI:1.1-1.9; complex single vision dispensing OR=1.3, CI:1.1-1.7; bifocal dispensing OR=1.4, CI:1.1-1.9; and progressive spectacle dispensing OR=1.3, CI:1.1-1.7).

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