Author’s response to reviews

Title: The effect of an educational intervention to improve tuberculosis infection control among nurses in Ibadan, south-west Nigeria: a quasi-experimental study

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Full title: The effect of an educational intervention to improve tuberculosis infection control among nurses in Ibadan, South-West Nigeria: A quasi-experimental study.

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BMC Nursing

Dear Editor and Reviewers,

Thank you so much for your time and kind reviews, and support toward improving the manuscript. The responses are provided below each comment and major changes highlighted in the revised version submitted.

Editor Comments:
1. Comment: There are lots of grammatical mistakes and the manuscript is required to be edited by a professor editor before resubmission.
Response: Professional help was obtained for the review of the manuscript

2. Comment: p.3, line 25, unsure why prevalence of HIV is included in the background information.
Response: The statement on HIV prevalence has been deleted.

3. Comment: To write full phrase in the first citation then follows by abbreviations. Eg. TB/HIV
Response: This has been done for TB/HIV (page 3, line 19) and other abbreviations e.g. TBIC (page 4, line 9).

4. Comment: p.7, why the intervention is considered "mixed-approach"? Explanation with references are required.
Response: The approach has been changed to a “multi-method” educational intervention as it involved the use of multiple method (lectures, video presentation, group discussion and handouts or notes)= page 5 line 11-15 and page 7, line 3. Relevant references have also been provided:

5. Comment: For the results section, the author need to consult a statistician or refer to other journal papers to revise the whole section. Normally, we do not write $p<0.78$, or $p<0.66$ as this is ambiguous. unsure chi-square (4), what does this mean?
Response: The result section was reviewed with the help of a statistician. The initial errors made with the “<” sign for p-values in the narrative have been corrected (from page 11, line 2 to page 12, line 2). Chi-square was used to compare the categorical variables of the participants between the facilities (page 9, line 1 and Table 1).

6. Comment: The entire section for analysis need to be rewritten.
Response: The section has been rewritten to reflect the above corrections.

Reviewer reports:

Anthony Summers, Prof Doc Nurse Practitioner (Reviewer 1):

Comment: The statistics on page three are interesting, would be good to see a comparison with the rest of the world in a table. Just to demonstrate the significance of PTB in Nigeria. There are multiple statements made that do not have any supporting evidence attached to them. There is multiple syntax and grammar errors present throughout.
Response: 1) Comparison have been made with similar countries in the WHO three high burden list (high burden countries, TB/HIV and MDR-TB) for the period 2006-2020 (page 25-page 4, line 2). For reasons of brevity, we thought a brief narrative would serve. 2) Care has been taken to provide references for statements made as reflected in the addition of relevant references. 3) Effort has been made to correct syntax and grammatical errors.

Esther M Johnstone, DNP, RN, CNOR (Reviewer 2):

Comment:
This is a well written, level III, quasi-experimental, quantitative descriptive research study. The purpose of the study is to improve tuberculosis infection control (TBIC) related practices and knowledge of nurses in Nigeria. This was a mixed approach which utilized an educational intervention along with a questionnaire. Both of these methods related to TBIC practices & knowledge. The facilities in Nigeria found that they had inadequate implementation of cost-effective TBIC measures at most of their health care facilities.

The study population was purposive sampling of nurses who work with TB patients. The research setting included two secondary health facilities in Ibadan, South-West Nigeria. This study consisted of two groups - one intervention group of 100 nurse participants and one comparison group of 100 nurse participants. Statistical methods included - independent t-test, Cohen's d = 1.7. SPSS statistics version 24 was used.

The researcher used a variety of educational interventions that included - 3 hour training sessions (x 5 sessions) for groups of nurses (18-25 at each session), used powerpoint presentations as developed by the WHO & CDC on TBIC, presented a 14 minute video (developed by the CDC), covered hand hygiene, provided printed copies of the lecture (PPT presentation) to each participant, displayed CDC designed educational materials (signs, posters, & stickers on TBIC workplace practices) at the health care facilities after each training, and adjustments were made in order to accommodate all the nurses so each one could be trained. In addition, the participants completed a self-administered questionnaire related to TBIC practices & knowledge. Results of this study demonstrates that training has been shown to be effective in improving knowledge & work practices of nurses.

Conclusion of this study the improvement in post-intervention scores indicates that the mixed approach (multiple educational interventions & questionnaire) was effective in improving TBIC among the nurses.

Response:
Thanks for the kind remarks.

Reviewing the Appendix 1 - Study Questionnaire
Question #4:
1. What is your professional rank? (Circle only one.)
   a) Nursing Officer - This reviewer does not know what the qualifications or educational level of a nursing officer? Please clarify
   b) Senior Nursing Officer - This reviewer does not know what the qualifications or educational level of a senior nursing officer? Please clarify
   c) Principal Nursing Officer - This reviewer does not know what the qualifications or educational level of a principal nursing officer? Please clarify
   d) Assistant Chief Nursing Officer - This reviewer does not know what the qualifications or educational level of an assistant chief nursing officer? Please clarify
   e) Chief Nursing Officer - This reviewer does not know what the qualifications or educational level of a chief nursing officer? Please clarify

Response:
In Nigeria, the nursing ranks ranges from Nursing Officer (lowest cadre) to Chief Nursing Officer (highest). The entry level for nurses is as Nursing Officer. The educational qualification for entry into the profession is either a combined as Registered Nurse/Registered Midwife qualifications
(cumulative training of 4 years in the School of Nursing and Midwifery) or a Bachelor of Nursing degree (4 years training in a university). Thereafter, their promotion to higher ranks is based on years of service and satisfactory job performance. To avoid any ambiguity, the actual cadres of the nurses have been used to describe their socio-demographic characteristics, rather than “junior” and “senior” ranks used earlier.

Once again, I wish to express my sincere gratitude to the editor and reviewers for their invaluable support.

Best regards,

Patrick A. Akande