Author’s response to reviews

Title: Influence of nurse and midwife managerial leadership styles on job satisfaction, intention to stay, and services provision in selected hospitals of Rwanda

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Version: 1 Date: 03 Mar 2020

Author’s response to reviews:

Response to the review comments

Dear editor,

I am writing this letter in response to the comments made by the reviewers and editor on the paper entitled “Influence of nurse and midwife managerial leadership styles on job satisfaction, intention to stay, and services provision in selected hospitals of Rwanda” (NURS-D-19-00423R1).

We would like to thank the reviewers and Editors for reading the submitted paper and for offering these comments, and we have provided our responses in this letter below. All changes made in the paper are highlighted with track changes and a cleaned version of the revised version is also provided. I genuinely believe that all comments have been addressed and therefore hope that you will accept this revised manuscript for publication in BMC Nursing.

Also on behalf of the co-authors, yours sincerely,

NGABONZIMA Anaclet.

Authors’ responses to Editor

#1: Please rename 'Introduction' to 'Background'.
Response: As per guidelines to authors, introduction is now changed to Background (Line 63)

#2: Please state in the cover letter whether the map depicted in figure 2 is your own or taken from another source. If taken from another source please acknowledge the source in the figure legend, and if it is under copyright also state the written permission given to use and adapt it. If the above conditions are not met the image needs to be removed. Please note the editors may request proof of permission at any time. Should you require an alternative source you may wish to try Wikimedia Commons.
Response: This map is ours and this is stated now in the cover letter.
#3: Please rename 'DISCUSSION OF FINDINGS' to 'DISCUSSION'.
Response:
As per guidelines to authors, discussion of findings is now changed to discussion (line 312)

#4: We note that you have not included a ‘Consent for publication’ section in Declarations. If identifying images or other personal or clinical details of participants are presented that compromise anonymity, a statement of consent to publish from the patient should be included. This section must be included even if it is not applicable to your manuscript. If consent to publish is not applicable to your manuscript please write ‘Not Applicable’ in this section.
Response:
Thank you for the observation. A section about consent for publication is now added in the manuscript (Lines 519-520).

#5: Please provide figure titles/legends under a separate heading of 'Figure Legends' after the References. If Figure titles/legends are within the main text of the manuscript, please move them.
Response:
Thank you for the comment. Figure titles/legends under a separate heading of 'Figure Legends' are now added after the References (Lines 622-630). In addition figures were deleted from the manuscript and uploaded as a separate image file.

Authors’ responses to Reviewer 1

#1: The sub-heading Study Population and Sample Size
The authors have stated "Using this total population of nurses and midwives as the total population and alpha level of 0.05, the sample size was calculated using the Taro Yamane simplified samples size scientific formula cognizant that we had a finite population."
This reviewer believes that it is important to report the population size (N), or at least an estimate of the total population size (in this study, the population of nurses and midwives of the five hospitals studied).
Response:
The comment is well received. As per the Taro Yamane formula to determine the sample size from a given population, the total number of nurses and midwives of the five hospitals studied was considered as the population size (N) while the sample size was (n). This is now included in the revised paper. (Lines 153 to 160).

#2: Line 150 through 153
Per the understanding of this reviewer, the authors seem to contradict their strategy for sampling of the prospective study participants. The paragraph starts with the statement "A multistage sampling strategy to recruit the study participants was used and each of the five hospitals was given a proportional quota based on their nursing and midwifery staff population." This statement is followed by "In each of the five hospitals of the study, a convenience sampling strategy was used to recruit participants meeting the inclusion criteria and consented to participate in the study." These two statements by the authors is very confusing; the authors must explain clearly the sampling strategy of their study participants, was their strategy based on multistage modeling or simply a convenient sampling strategy?
Also, the authors should provide a brief explanation about proportional quota that was based on the nursing and midwifery staff population.
Response:
The methodology section is now carefully revised and more details were added to ensure everything is well understood by the reader (lines 145-152).
Multi-Stage sampling was used as follows: We started with a random sampling of one of the five provinces. After obtaining the Northern Province as the study area, purposive sampling of three of the five districts was used to represent the most rural, the most urban, and a combination of public and faith-based hospitals. We had to make sure that these selected districts represent all districts of the Northern province. In fact, among 5 districts of the Northern province, two of them hold the urban region, two are purely countryside and the other one holds a semi-urban region. The three selected districts include the one holding the urban region, the one with the semi-urban region and one of the countryside. The three districts selected, all five hospitals were retained for the study. Once we finalized to get the total number of nurses and midwives of these 5 hospitals of the study (N=292), we calculated the sample size (n) and the next step was to give each of the five hospitals a proportional quota based on their nursing and midwifery staff population and then a total number of nurses and midwives to be included in the study per hospital was determined. This means that a hospital with more nurses and midwives was given a higher number of nurses and midwives to participate in the study. After this step, the number of nurses and midwives to be included in the sample per hospital, within each hospital, a random sampling strategy was used to recruit participants meeting the inclusion criteria and consented to participate in the study. Therefore, we believe that based on the different sampling techniques used in this study, we can confidently say that it is a multi-stage sampling.

#3: Line 154 through 155: This piece of information belongs to the Result section.
Response:
We agree with the reviewer. This sentence has been moved to the section of the results as it represents the response rate (Line 218-219).

#4: Under the subheading data collection instrument
Lines 171-173
The authors have stated "To ensure the reliability of the instrument, a pre-test of the research instrument was performed with 10 nurses or midwives in a different hospital, to identify and modify any areas of misunderstanding in the instrument."
This reviewer, per her understanding of the statement above, believes that the authors assessed the validity of their instrument.
Reliability is about the consistency of a measure, while validity is about accuracy of a measure. Per the statement of the authors, they assessed validity not reliability of their instrument.
Response:
We agree with the reviewer. The pretest that was conducted was to ensure the clarity and comprehensiveness of the study instrument. Thus, this definitely was for validity. This is revised in the manuscript (line 190).

#5: Line 239: This line belong to the Discussion section of the manuscript. Not the result.
Response:
We agree with the reviewer. This sentence provides explanations of the results beyond interpretation. This was deleted from the result section (lines 260-261)
#6: Lines 255-257; Same as above, this is an interpretation of the findings; therefore, this statement belongs to the Discussion section of the article.
We agree with the reviewer. This sentence provides explanations of the results beyond interpretation. This was deleted from the result section (Lines 276-279)

#7: Lines 260-261; Same as above.
We agree with the reviewer. This sentence provides explanations of the results beyond interpretation. This was deleted from the result section (Lines 283-284)

#8: This manuscript can benefit from editing by an English speaking technical writer.
Response: The manuscript was extensively reviewed and proofreading was done by two English native speakers. Spelling and other grammar errors were corrected throughout the manuscript.

Authors’ responses to Reviewer 2

#1: Introduction, line 75, it would be more correct to say nurses are the first to meet patients in all conditions with which they present.
Response: We agree with the reviewer. This is revised in the manuscript (lines 78-80)

#2: The use of the term 'subordinates' is discouraged as it implies a power relationship, other terms which might be used are team members, those who report to them.
Response: Though the reviewer is right, this term is usually being used in hospitals and people working in different hospitals are familiar with it, therefore we believe it would not cause any harm. In addition, it is the one that is being used in the Path-Goal Leadership tool which is a standard tool used in this study. Consequently, we prefer to keep the term as it is.

#3: What did gatekeeping involve by the DoN?
Response: Directors of Nursing (DoN) were involved in order to get in contact with the study participants because the nurses and midwives were hardly known by the Investigators. Therefore, the DoNs were the first contact in the hospitals.

#4: The qualification details of nurses and midwives A0, A1, A2 and abbreviation meanings for IM could be added below Table 1
Response: The term IM and even OPD were written in full as Internal Medicine and Outpatient Department and even neo have been corrected as neonatology (see table 1) (Lines 208-209). For those terms A0, A1 and A2 they have been explained under Table 1. As well (Lines 229-230).

#5: In table 4, 2 questions are reversed. Why was that? One seems to be neutrally worded and the other seems to be positively worded.
Response: The statements which were reversed are the following: (1) the N/M manager gives vague explanations of what is expected of subordinates on the job, (2) the nurse-midwife manager says things that huts sub-personal feelings, (3) the nurse mid acts without consult
subordinates, (4) the N/MM shows that he/she has doubts about subordinates ‘ability to meet most objectives.

All these statements like all others of table 3 are part of The Path-Goal Leadership Tool and their interpretation requests to reverse these 4 above. It is very clear that these reversed questions have some negative connotations so that having 5 marks in LIKERT Scale has a negative connotation. The total marks for any of four leadership styles of Path-Goal Leadership are given by the sum of each of its 5 assertions. Therefore, adding a positive and negative statement together could not make any sense, rather they have to be in the same direction.

Example: The N/M manager gives vague explanations of what is expected of subordinates on the job (Rev) if this has 5 marks, it means that the manager is not really doing well so that only 1 mark will be added to the total and so is for other reversed assertions. In other words, the manager should not give vague explanations of what is expected of subordinates on the job. Likewise, the manager should not say things that hurt sub-personal feelings, should not act without consulting the subordinates and he/she should not show that he/she has doubts about subordinates ‘ability to meet most objectives (Rev).

Therefore, all these 4 assertions are negative while all other remaining assertions are positive.

#6: P23, the comparison with the Ethiopian study does not seem useful when varying levels of salary are likely to prompt 'shopping around', suggest remove this as it is quite a different environment and leadership is not the main determinant it would seem.

Response:
We thank the reviewer for the suggestion. However, the salary seems to play a key role when comes to intention to stay. In addition, 10% of the variance in intention to stay is explained by the leadership style. Although not as high as for job satisfaction (38%) or service provision (22%), it is still a significant contributor. Therefore, would like to keep it.

#7: Limitation of underpower was not included. Recommend 20% add to the calculated sample size to account for non-response. What is meant by 'possible bias' in this context? P9
What is meant by there is a tendency of social desirability bias P26.

Response:
We agree that under power was not included in the limitation of the study, however, we believe that the sample size used was not small given the study population used in this research. Thus, we think that this might not be among the limitation. We thank the reviewer for the suggestion about 20% to account for non-response. To this percentage, we think that 10% that we added is also allowed and is used to account for non-response.

For possible bias, we thank the reviewer for this observation, this was an error and now corrected from the revised manuscript (line 159).

In the limitation, we mentioned the social desirability bias. This is a common bias and weakness of the cross-sectional study design. It is a tendency of a study participant to answer questions in a manner that he/she thinks will be viewed favorably by others which may not necessarily be true. By this, that means that there may be over-reporting good actions/behaviour or underreporting bad actions/undesirable behaviour. For example in this study, a study participant could be afraid of reporting her/his supervisor in a negative way, thinking that people will not view it a good report. However, as mentioned in the manuscript (lines 479-481) by using self-administered method (where a participant had to fill the questionnaire on his/her own), making sure that the Supervisor will not have a contact with the filled questionnaire, and ensuring anonymity by not mentioning names on the
questionnaire, the participants were ensured that their responses will be treated confidentiality and nobody will be able to associate the responses with individuals. We hope with these methods, we minimized this type of bias.

#8: Implications for nursing management, the authors may like to consider the notion of succession planning and preparing future leaders for their role early in their career. Management and leadership competencies is mentioned far too late on page 27. Either leave it out and stay with 'styles' or introduce the notion in the background.
Response:
We agree with the reviewer’s suggestion about succession planning and preparing future leaders for their role early in their careers. This is added in the manuscript (Lines 450-451). Besides, we agree to leave management out and only keep leadership style. This was revised in the manuscript (lines 502-506).