Author's response to reviews

Title: Diabetes related knowledge among residents and nurses: A multicenter study in Karachi, Pakistan.

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Diabetes related knowledge among residents and nurses: A multicenter study in Karachi, Pakistan.

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Thank you very much reviewers and editors for your comments and giving me an opportunity to revise my manuscript based on your comments. We have reviewed the above manuscript according to your reviewer’s comments.

Reviewer: Ali Khuwaja

Minor Essential Revisions:

1. Abstract: Abbreviations should be spelled out first time. Expletive words like 'surprising' are not encouraged to use in any section of manuscript except in discussion section. Authors should have clear understanding of word significant'. What authors wants to explain here? Is it significant statistically? or is it means 'major/ noteworthy'? If it is not statistically significant, than it should be replaced noteworthy, high, major and so on.

Abbreviations are spelled out now in an abstract first for e.g Internal medicine Residents (IMR) etc.

The word SURPRISING has been removed from an abstract.

Significant:

2. Objectives of the study are not very clear for the readers, should be rephrased.

Objectives have been rephrased.

3. Methods: Where pilot testing of questionnaires conducted? Was it one of the same hospitals of final study? What was average time duration to fill out questionnaire?

Piloting was done in one of the participating hospitals (The Aga Khan University Hospital) of the study. Average time is mentioned in the manuscript which was 15 minutes keeping in mind that all questions were open ended.

4. Tables: Headings and subheading of table 1 are not clear enough. For example, it is not clear that how many questions were included to assess the
knowledge about outpatient management.

Headings have been slightly changed to make it clearer. First heading is category of participants (for e.g. IMR, FMR etc.), second is number of participants, third is overall mean percentage correct score with p-value. Questionnaire has been included to show the number of questions in each category.

5. Discussion: To make the clear understanding, author should discuss the limitations of their study in more detail.

Limitations of the study have been discussed in detail in discussion section.

6. References: Some references are quite old, should be replaced by new and updated references.

Citations of some references are inappropriate and inaccurate.

New references have been added after literature review.

Major Compulsory Revisions

1. Abstract: Description of the results is vague, need to be rephrased.

Abstract has been rephrased.

2. Background: Literature search is not sufficient enough to describe the background with strong rationale of this study. There should be extensive and directional literature to support rationale. Authors mentioned that "Evidence suggest that by improving the glycemic control, these ---------". Why author only mentioned about glycemic control. Extensive literature exists about the level of knowledge and various disease outcomes among diabetics. How author came to know that new insulin analogues have made insulin treatment very challenging in Pakistani setting? Cite accordingly to support this statement; otherwise rethink about this statement.

Background has been reviewed after literature review. The term Pakistan has been replaced by general statement that inadequate understanding of analogue could lead to adverse clinical outcomes.

3. Methods: How open ended responses were grouped, coded and scored?

What method was used to score the responses cumulatively? Were the level of training and working identical in all hospitals? Probably not! Authors are suggested to give description about studied hospitals particularly in reference to training and education of nurses and residents. How and why these particular hospitals were selected? Which sampling method was used? What was the response rate and what was the proportion of unanswered questions? How sample size was calculated and does post-hoc sample size calculated? (if the proportion of non-respondents and unanswered questions were reasonably high). Describe the qualitative and quantitative variables of this study in some details.

The answers to the questions were first predefined based on recent guidelines and then categorized into qualitative variables (true/false). Each of the answers was given one point if answered correctly. Unanswered answers were counted as wrong (score 0). The total score was acquired by adding respective points which were then expressed as mean percentage.

Since it was observed that the participants responded to other questions in the questionnaire, it was assumed that most probably unanswered questions reveal the fact that the participants were not
aware of the correct answers. The level of training was not obviously identical in all of the hospitals but during analysis there was no major difference identified reflecting the overall lack of diabetes related knowledge between the groups so the data was combined. Sampling method was non probability purposive sampling. These tertiary care hospitals were selected on the basis of the presence of post graduate training programs and included both government and private institutes. All the hospitals selected had recognition for house job and specialist training by regional regulatory authority. Since the responses were similar among the five tertiary care hospitals therefore the data was combined. Descriptions of sample size, response rate and qualitative/quantitative variables have been described in method section in detail.

4. Results: This section should be more specific, clear and focused according to the study objectives. Figure 2 describing knowledge score comparison of four groups while in figure 1 only two groups were compared, why?

New figures have been added showing comparison of all four groups. Results have been reviewed and rewritten based on advice given.

5. Discussion: This section is deficient in literature citation and conceptual debate. Study results should be compared and discussed with local, regional and international literature. There is no need to give numerical numbers again in discussion section.

Discussion section has been reviewed and comparison has been done with local and international studies.

All the changes have been underlined.

Reviewer: Ruth Kalda

Reviewer’s report:
1. Major compulsory revisions- Concrete description of methodology is requested. How the answers of the questionnaire were coded, scored and summarized. How many questionnaires were delivered and what was response rate of the each group of residency trainees. What was the general response rate? What were the main reasons of the non- response (in the case you know). Why such a low response from FMR side? In the discussion section the authors are suggested to critically discuss some more limitations, especially about response rate and what does it mean. The quite large variability of the answers (e.g 40% ± 20, or 50% +21 etc. shows that the groups are quite small ones). What about generalization of the results? In several cases the p-values are missing.

Methodology has been described in detail. Reason for low number of FMR is the paucity of family practice training institutes in the region. Response rate of 80% was quite good. Missing p values have been added. The multicenter nature is the major strength of our study maximizing the generalizability of the results. Except for the FMR group, all the groups were quite big. Even among FMR group the results didn't show variability i.e. 40± 16. Coding and scoring of the answers have also been summarized in method section. The general and individual response rate has also been given.
In the statistical analysis section it was mentioned that qualitative variables were analysed and frequencies for this purpose were reported. What kind of qualitative variables the authors mean?

Qualitative and quantitative variables have been described.

2. Minor revision- Please explain to the readers why questions unanswered were considered false? Please explain to the readers the acronyms AIC, LDL etc while those occur first in the text. It would be more correct.

Explanation has been given for unanswered questions in method section. The acronyms have been explained as well.

To include the questionnaire as a supplement to the paper is suggested in order to better understand the questions and the answers possibilities.

**Questionnaire has been added as a supplement.**

Discretionary revisions- short description about how diabetes care is organized in Pakistan would be useful to understand better the background.

**Short description has been given with studies with references showing the outpatient cost of diabetes care in Pakistan.**

**Manuscript has been reviewed and language corrections have been done.**