Author’s response to reviews

Title: Baseline Assessment of Patient Safety Culture in Public Hospitals in Kuwait

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Author’s response to reviews:

Dear Editor-in-Chief,

We thank you for the opportunity to review our submitted manuscript and would like to also thank the reviewers for providing helpful comments and suggestions. Please find below a point-by-point response to the reviewers’ comments in the hope that you find the changes made to the manuscript satisfactory/

Reviewer 1: Claire O'Hanlon

The authors present the results of their survey of patient safety culture in a sample of hospitals in Kuwait. The survey is an established instrument and the analysis methods are fairly standard. This paper provides valuable information that can guide administrative policy in Kuwait, but I have several critical concerns about the transparency with which the researchers report their methods that must be addressed. The paper will also be improved with the removal of some extraneous information and more streamlined results and discussion sections.
Major comments:

Page 5-6: Please do not individually summarize all of the studies in the literature review. I would start with the Elmontsri systematic review and the other studies could be combined into a single paragraph that summarizes the most important points.

We modified the introduction session and summarized the literature as suggested.

Page 7: You need to provide more information to give the reader context on how generalizable your sample is. How many total hospitals are there in Kuwait? Were the 16 you picked a convenience sample or did you randomly select them? Did you stratify by size or just note the size? Why did you exclude other types (non-public, military, etc.) hospitals? Did you intend to survey every employee that fit your criteria? How did you recruit participants? How were "selected" hospital staff (page 8 line 43) selected? How did you pick the focal people? Did focal people try to get a full census of their department or were participants selected non-randomly or randomly? Was participation voluntary or mandatory?

Thank you for giving us the opportunity to clarify this issue. We will respond in point-by-point format as there are several questions to address:

- How many total hospitals are there in Kuwait? Were the 16 you picked a convenience sample or did you randomly select them?

This study focused on public hospitals in Kuwait. There are currently 20 public hospitals in Kuwait, All the hospital were included at the time of the study, they were 16 in number, the remaining four hospitals were newly established and the staff had less than 1 year of experience so they were not sampled.

- Were the 16 you picked a convenience sample or did you randomly select them?

We sampled all 16 hospitals that fit the sampling criteria. The remaining four hospitals were newly established and as such were not sampled. We plan to sample them if we conduct re-assessment surveys in the future.

- Did you stratify by size or just note the size?

We included all the hospitals with no stratification by size. However, we did control for size in the analysis as it may impact respondents’ perception of patient safety culture.

- Why did you exclude other types (non-public, military, etc.) hospitals?

Since the safety and accreditation programs at the Ministry of Health only covers the governmental hospital, therefore the military and private were not included in the study.
- Did you intend to survey every employee that fit your criteria?

Yes, all the staff in the selected target groups were considered potential respondents.

- How did you recruit participants?

All the staff within the selected group were targeted. Complete list of numbers of respondents within each target group were prepared and surveys were prepared accordingly. We sent each hospital the number of surveys requested according to number of potential respondents.

- How were "selected" hospital staff (page 8 line 43) selected?

We first selected the target groups to be included in the study and then all staff in each of these categories were included without sampling.

- How did you pick the focal people?

The focal person in the participated organizations were the quality physicians and nurses. They were trained on how to distribute survey material, respond to questions by participants, issues of confidentiality, and how to handle returned surveys to maintain confidentiality.

- Did focal people try to get a full census of their department or were participants selected non-randomly or randomly?

Focal people distributed the survey to all staff members within each department. The list was provided by individual facilities. They were asked not to maintain a record of the employees who returned the surveys so as to maintain confidentiality.

- Was participation voluntary or mandatory?

Participation was voluntary. All respondents were informed of this in the consent form on the survey.

Page 9 line 48: I really don't understand how the remaining two outcome variables are collected and I can't figure out where they are explained. Are the composites and asked about in the survey or are they data from somewhere else - are patient safety grade and number of events reported administrative or public data? What do these measures incorporate? Is number of events normalized for the size of the hospital? If it is from your survey, how is it asked about? This is extremely opaque and the entire meaning of your management hinges on this.

We amended the section on survey outcomes to state the following:

The survey has a total of 4 outcome variables. The first two are frequency of events reported and overall perception of safety which are measured within the 12 composites. The remaining two
outcome variables are the patient safety grade and the number of events reported which are measured as separate multiple choice questions.

Page 13 line 24-40: This paragraph doesn't make sense if the two outcomes above are from administrative data because respondents wouldn't report it?

The survey measures individual perception of patient safety culture. Respondents are not required to provide administrative data in their responses.

Page 14 line 50: Report that no dimensions were worse than US or Lebanon.

We added the following statement: Five dimensions deviated slightly from benchmark when comparing results to the US. When comparing results to Lebanon, four composites differed slightly from the benchmark and three when comparing results to KSA. However, none of the composites were found to be worse than US, Lebanon, or KSA.

Page 15-17: Your discussion section is kind of all over the place. Focus on the major contributions and findings of your study, how they relate to the literature, limitations and future work.

Thank you, we revised this section based on your suggestion.

Page 15 line 27-45: Your study has far more limitations than you have included here, especially if, as I suspect, your hospitals and participants were not selected randomly.

As mentioned earlier, we targeted all respondents at all 16 public hospitals that have been operational for more than one year.

The limitations section covers the issue of over-sampling of nurses and limited responses from physicians and other types of employees. However, this cannot be avoided in hospital settings as nurses comprise the majority of healthcare providers. We also mentioned the issue of oversampling of non-Kuwaitis but this is an issue that reflects country demography.
Minor comments:

Page 3 line 11: missing a word after "critical" or remove "a"

Thank you, this was done.

Page 4 line 20: change "prominence" to "importance"

Thank you, this was done.

Page 4 line 28: delete have, change "theirs" to "their"

Thank you, this was done.

Page 4 line 42: remove italicization

Thank you, this was done.

Page 4 line 44: "ameliorating" probably is the wrong word here

Thank you, this was changed to improving.

Page 4 line 47-60: be consistent with whether or not the names of the dimensions are capitalized - you switch around in the manuscript. Also please refer to the dimension as such when you refer to it (e.g., teams performed well on the dimension of Teamwork within Units but poorly on the dimension of Non-Punitive Response to Error, etc.).

Thank you, all composite names were capitalized.

Page 4 line 60: comma needed after "survey"

Thank you, this was done.

Page 7 line 26: delete "it should be noted"
Thank you, this was done.

Page 8: line 18: Delete "Only respondents with at least one year of experience in the hospital were included in the sample" (you repeat it below in your exclusion criteria)

Thank you, this was done.

Page 8 line 30: . should be ,

Thank you, this was done.

Page 8 line 32: Why would people who no longer work at the hospital even show up in your potential sampling frame?

Thank you for pointing this out. This was used as a precautionary to ensure that focal people do not send out the surveys to employees who are in the process of resignation. It was removed from the exclusion criteria to avoid confusion among readers.

Page 9 line 6: add "it" after "enclose"

Thank you, this was done.

Page 11 line 7: reiterate response rate again

Thank you, the response rate was mentioned.

Page 11 line 20: delete "found to be", remove s from females

Thank you, this was done.

Page 12 line 1: others not other

Thank you, this was done.
Page 12 line 1-45: "$90.0% percent positive" should be "$90.0% positive" etc.
Thank you, this was done.

Page 14 line 6: report rather than demonstrate - demonstration implies something observable not perception
Thank you, this was done.

Page 14 line 53: Keep this legend with the appropriate graph or put it in caption so I can understand all charts by themselves without referring to the text
Thank you, this was moved to below Table 6.

Page 16 line 23: grades not grade
Thank you, the whole paragraph was modified so you may not be able to see this change.

Page 16 line 46: fewer not less
Thank you, this was done.

Page 16 line 39: Why is one reference in APA style?
Thank you, this was corrected.

Page 18 line 20: Add "who" after "professionals", delete "are"
Thank you, this was corrected.

Page 18 line 21: Delete permission sentence - no one is named in your acknowledgments
Thank you, this was corrected.
Page 18 line 58: Availability of data and materials refers to the raw data (the data you analyzed to generate the results). If they aren't posted somewhere online you should state that they can be obtained from the authors or that they are not publicly available, whatever the case may be.

We added this statement: Kindly contact the corresponding author for a copy of the dataset. Requests will be reviewed by the study team before they are sent.

Tables: All of your tables are named table 1 and if there are page numbers they are also 1 or not listed, which makes it hard to refer to them. They all need more detailed captions to understand components of composite score, source of outcome measures,

We are not sure why this problem occurred. All the files we submitted clearly labeled the tables. They are also labeled correctly within the uploaded documents.

Tables page 1: Remind reader of overall sample size N

Thank you, this was added.

Tables page 1: Profession and Experience in Hospital sections are identical? Delete one of them

Thank you. We added years of experience instead of the duplicate results on profession.

Tables page 5: Explain the numerical values of the scores reported so I can get a sense of the potential range (1-10? 1-5? 0-5?)

As mentioned in methods, composites were scored on a 5-point Likert scale. A note was added to the table title.

Tables page 7: don't list significance as 0.000, use <0.001, use "reference" rather than 1 for the odds ratio references

Thank you, this was corrected.

Tables page 9: Did you cluster your standard errors by hospital? Your standard errors small because they are probably wrong.
Yes, we clustered the standard errors by hospital.

Table 6: Keep checkmark, box, X key with table. Indicate what the percents mean "percent of surveyed positively reporting..." etc.

We modified the table title to the following: Benchmarking Percent Positive on Survey Composites from Kuwait against those in US, Lebanon and KSA.

Reviewer 2: Ahmed Awaisu

General Comments The authors conducted a baseline assessment of patient safety culture in public hospitals in Kuwait using the Hospital Survey on Patient Safety Culture (HSOPSC). This study is not novel, but merits investigation in the context of Kuwait. The sample size used is very large and will likely result in findings that are representative of healthcare professionals and other patient safety stakeholders/advocates in Kuwait. However, I noted that the sample is biased towards nurses with only a few pharmacists. The grammar and scientific writing skills are good, but require significant improvement in several palaces. I suggest that the paper should undergo language editing by credible services such as Wiley Editing Service or similar. In addition, I have some concerns regarding the statistical analyses utilized and will equally advise that an experienced biostatistician review these aspects. Overall, the paper can be reconsidered should the authors be prepared to undertake revisions.

Background: Fairly well-written, but can be better. There are too many individual studies reviewed and cited, but not in any logical sequence.

Thank you, we made changes to the introduction as suggested.

The study rationale and justification are unclear. This casts some doubts in the reader on why it is important to conduct the study in Kuwait or at least why did the authors conducted the study. This has to be made clear.

We were previously aware of a study that focused on patient safety culture in the context of primary care settings in Kuwait. We chose not to add it to our introduction at the time as it did not make sense to compare findings from primary care settings to hospitals. However, we did
add the below paragraph to highlight the evidence gap around patient safety culture in hospitals in Kuwait.

Limited research was found in the context of Kuwait. One study focusing on patient safety culture in primary care settings identified non-punitive response to errors, frequency of event reporting, staffing, communication openness, and handoffs and transitions as areas of weakness. Areas of strength were identified as teamwork within units and organizational learning (Ghobashi, 2014). This study, however, used the hospital survey for primary care settings, a tool specific to medical offices is available on the AHRQ website. No other studies focusing on patient safety culture in Kuwait were identified.

The term "patient safety culture" was initially abbreviated as PSC, but the authors keep using both inconsistently throughout the manuscript.

Thank you for pointing that out. We replaced the acronym with the original term patient safety culture throughout the paper.

Page 4, line 44 - What do the authors mean by ameliorating PSC? I thought they should be aiming to cultivate it. Please use a more appropriate term.

Thank you. We changed it to “improving patient safety culture”.

Page 5, line 16 - Cite those multiple studies.

There are hundreds of studies that used this survey. We modified the statement to the following: “The HSOPSC survey, which was developed by the Agency for Healthcare Research and Quality (AHRQ), has a great international reverberation as it has been validated and used in different continents and contexts (Viana De Lima Neto et al., 2017).”

Objectives: Can be better stated to comply with the principles of SMART objectives. In addition, there is need to mention the targeted population (i.e. among who was the study conducted).

Thank you for your comment. We added the target population in the objective.
Methods: The Methods section needs significant restructuring and improvement in terms of content and structure. The section "Design, setting and sampling" should be split to several important elements of methodology. Example, each of the 3 should stand on its own. However, the different elements of the methodology should be organized in a logical manner such as: (1) Study design; (2) Setting; (3) Population and sample; (4) sample size and sampling; (5) Study instrument; (6) Data collection procedures; (7) Ethical approval etc.

We used the following headings to structure the methods section: Setting; Sampling and data collection; Study Instrument; Ethical approval; Data Management and Analysis.

The authors should describe how sample size was estimated/calculated and how the respondents were sampled (i.e. sampling technique). There is mention of clinician and non-clinician staff which really look awkward to me. Any health professional such as nurses, physicians, and pharmacists are considered clinicians in the modern world.

We removed the mention of clinical and non-clinical staff as all categories of respondents were detailed. We did not sample a specific number of respondents as we intended to collect data from as many respondents as possible. The team feared that sampling a specific percentage of staff would lead to low response, oversampling of specific categories, and bias by focal people in selecting respondents. As such, we approach all hospital staff and asked all those who fit the inclusion criteria to complete the survey.

The authors failed to explain how and why they selected the 16 hospitals, the 12871 respondents. Why not 20 hospitals and 10,000 participants? How were they selected?

We added the following statement to the methods section: There are 20 public hospitals in Kuwait, however, we selected 16 hospitals as the remaining facilities had only recently been established and as such did not meet our inclusion criteria.

Page 7, line 20 - 22: The investigators mentioned that they adopted a customized version of the HSOPSC developed by the AHRQ. Please indicate/cite the reference for the adaptation.

The sources were originally mentioned and referenced in the text:


Page 9, line 45 - 47: What is the difference between "frequency of events reported" and "number of events reported" as outcome variables?

The outcome variable on frequency of events reported was measured through one of the twelve composites. The outcome on number of events reported reflects the actual number of events reported by the respondent and is measured as a multiple choice question. This was explained in the methods section.

Data management and analysis: Overall, I suggest be reviewed by an experienced statistician. But, I doubt if ANOVA f-test is the appropriate test to examine the association between the two outcome variables (patient safety grade and the number of events reported) with the remaining patient safety culture composites.

The two outcomes (patient safety grade and the number of events reported) are categorical questions which include more than two potential responses. The patient safety culture composites are all measured numerically with values ranging from 1 to 5. This makes ANOVA the ideal option for assessing association between these variables. Had the two outcomes had less than three potential responses, then a t-test would have been more appropriate.

Benchmarking: I am unclear about the benchmarking done by the authors using some mathematical equations. Is this a standard norm?

This is a formula developed in the National Healthcare Quality and Disparities Report and is used to determine distance from a pre-set benchmark. The value of the distance from benchmark can help assess performance on specific indicators. Comparing findings across countries without using such a formula to determine value of difference can be misleading and subjective. As such, this formula was used for benchmarking findings from this study to similar studies in the region and the US. This is not the first time this formula was used for comparing findings on patient safety culture across countries. A paper using this formula is now in press and will be published in BMC Health Services Research soon. The source of this formula is referenced in the text.

Results: This section needs significant overhaul. The section is not written at an international standard of scientific writing.
Thank you for your comment. We made minor changes to the way results are written but added more subheadings to define each section and make it easier to follow.

How did you determine 70% or higher to be areas of strength etc. Any reference to support this notion?

The cutoff points were set by the AHRQ and the reference for this was added to the methods section.

Table 1 has not been cited within the text.

Thank you. We referred to Table 1 in the demographics section.

Page 13, paragraph 2 requires improvement and rewriting as you can see from my comments below.

We made some changes as suggested.

Page 13, line 24 - 26: Respondents holding a university degree were less likely to report better patient safety grade compared to who?

Thank you, we added the reference group.

Page 13, para 2, line 26 - 30: Physicians, pharmacists, nurses and administrative staff, all had lower odds of reporting higher number of events compared to who?

Thank you, we added the reference group.

Page 13, para 2: "Kuwaiti nationals were had lower odds of reporting better patient safety grade but higher odds of reporting higher number of events." Correct grammatical error (e.g. were had). Also, higher odds compared to who?

Thank you, we made the correction and added the reference group.
Page 13, para 3: "The Linear regression analysis below….." What do you mean by below? I did not see the regression below.

We replaced it with “in Table 5”.

There is generally unnecessary use of capitalizations throughout the manuscript (e.g. in describing the 12 dimensions/constructs of the HSOPSC).

We used capitalization to indicate the names of the composites.

Tables: There is miss-labeling of tables. For example, Table 1 to Table 5 are all labelled as Table 1. I am not sure why.

We are not sure why this problem occurred. All the files we submitted clearly labeled the tables. They are also labeled correctly within the uploaded documents.

References: There are many errors throughout the reference list. All journal names are not written according to the BMC style.

The reference list was generated by EndNote but we went through it and made some corrections as suggested.

Thank you for your kind consideration of our manuscript. We look forward to the outcome of peer review.

Regards,

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