Author's response to reviews

Title: Hospital Safety Culture in Taiwan: A Nationwide Survey Using Chinese Version Safety Attitude Questionnaire

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Author's response to reviews: see over
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Dr. Melissa Norton  
The Editor-in-Chief  
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Dear Dr. Norton:

Please find the revised manuscript entitled “*Hospital Safety Culture in Taiwan: A Nationwide Survey Using Chinese Version Safety Attitude Questionnaire.*” It is re-submitted to the BMC Health Service Research journal for possible publication.

This is the secondary revision and we made necessary revisions with respect to reviewer’s comments. We add one more “Additional file” to present the analytic results of multiple regression methods as suggested by reviewer. The minor revisions did not change the main study findings but enhance the methodological rigor. The authors use the “tracking changes” functions of *Microsoft Word 2003* software and highlight all changes made when revising the manuscript.

There is no interest conflict to any other organization. All listed authors have seen and approved for the final manuscript, and concurred in submission. On behalf of the Taiwan Joint Commission on Hospital Accreditation and the study taskforce of Taiwan Patient Safety Culture Survey, I sincerely appreciate for your great help.

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Yours sincerely,

Dr. Wui-Chiang Lee
The authors appreciate Professor Carl J Lombard’s comments. We have made necessary revisions based on the comments and would like to clarify our points below:

Q1: A comment clarifying why a multiple regression model where the 5 dimensions are fitted together was not used.
A1: The analytic results using multiple regression models combing the five SAQ-C dimensions are added in the Additional file 2. Generalized estimating equation models are applied with independent working correlation structures. The associations between SAQ dimensions and safety behaviors were similar to that of the single-variable analysis (Table 4). The association between SAQ-C dimensions and “service delay by communication breakdown” was still not significant. The differences between univariable and multivariable analysis were mainly in the “Working conditions” and “Perception of management” dimensions. Healthcare workers with positive perceptions to their working conditions and management, their hospitals were more likely to encourage safety events and to prioritize safety trainings. We present the analytic results using two different methods in Table 4 (main finding) and Additional file 2 (supplementary information). We believe that the differences in odds ratios between the two different methods do not change our study findings. Both methods support the strong association between healthcare workers’ safety attitudes and their working hospitals.

Q2: A clarification about the limitations of the statistical significance of an odds ratio of .982 (service delay by teamwork) as the study has a large sample size and this finding cannot be interpreted as a significant safety finding. Given the rest of the odds rations for this dimension there seems to be no association between this outcome and the safety dimensions."
A2: In the correlation analysis comparing the association between each of the five SAQ dimensions and outcome measures (Table 4), healthcare workers with positive attitudes to each SAQ dimension were more likely to perceive good collaboration with coworkers (nurses, physicians, and pharmacists), and their hospitals were more likely to encourage safety reporting and to prioritize safety training programs (Wald chi-square test, p<0.001 for all). However, even though healthcare workers with positive perceptions to each SAQ dimension were less likely to perceive “communication breakdowns that leads to delays are common in this clinical area,” the association did not hit the statistical significance level for safety climate,
job satisfaction, perception of management, and working conditions (except the Teamwork Climate, p=0.032). The insignificant association may be due to that only 18.4±8.3% of healthcare workers felt that “communication breakdowns that leads to delays are common in this clinical area (in Table 3).” This figure was lower than the other outcome measures (between 52 and 71%). From the survey results, the service delays were quite uncommon due to communication breakdown from most of the healthcare workers’ perspective. Even if such delay existed in clinical areas, it was less likely to be related to safety climate, job satisfaction, management, or working conditions from a population’s perspective. There were other factors contributing to the service delays but were beyond the scope of the SAQ instrument. We would suggest researchers to select other safety measures in the future. We clarify these points on page 12 (Result section) and 15 (Discussion section).