Peer Review File

<mark>Reviewer A</mark>

Comment 1: This is an extremely well written manuscript. It explores a previous gap in the literature regarding the experience of the Australian trainee in paediatric airway cases. The study is simple but very useful.

I have only a few comments.

I think a more accurate title would be 'Australia Otolaryngology trainee experience in paediatric airway management and airway simulation training' or 'Paediatric airway management and simulation training: The Australian Otolaryngology trainee experience' or similar. The current study does not really evaluate the role of the simulation training per se, although such a study could be designed around the senior author's course in the future.

Response 1:
Agreed with suggestion. We have amended to the Title 'Paediatric airway management and simulation training: The Australian Otolaryngology trainee experience'.

Comment 2: Line 70 should have the '(ENT)' placed before the word 'surgeons'.

Response 2:
Change made to line 75 on document.

Comment 3: 'Standardize' should be spelled with an 's' in like 71 and elsewhere.

Response 3:
Please see amendments to line 76, 110, 185, 306.

Comment 4: Line 77 should be re-written to emphasise that 17% of paediatric patients presenting with airway pathology require emegency treatment prior to arriving at a paediatric hospital (rather than 17% of paediatric patients overall).

Response 4:
Please see amendments to line 82 and 83.

<mark>Reviewer B</mark>

This is a survey of local ENT trainees. The big issues are as follows:

Comment 1: Only 25% of trainees responded (This is a very poor response rate) - especially given the small population
Response 1: See line 382-386.
Changes in Text: "*Limitations of this study include the voluntary nature of the survey and is reflected in a smaller sample size and potential for sampling and non-response bias. Therefore, data may not be a true representation of the whole trainee cohort, as only those with an interest in Paediatric Otolaryngology may have responded. However, there was representation from all training regions and SET levels in the survey responses.*"

Comment 2: Can the authors supply the geographical representation of the responders.
Response 2: See Table 1.

Comment 3: Can the authors provide a description of how coverage and sampling error were minimized?

Response 3: See 162-163 + 383.

Changes in Text: *"All parts of the survey were mandatory to prevent missing data. Coverage error was minimized by inviting only ASOHNS trainees. There were no follow up surveys planned."*

"Limitations of this study include the voluntary nature of the survey and is reflected in a smaller sample size and potential for sampling and non-response bias."

Comment 4: Were follow-ups planned for and used?

Response 4: See line 163.

Changes in Text: *"Coverage error was minimized by inviting only ASOHNS trainees. There were no follow up surveys planned."*

Comment 5: Can authors address potential nonresponse bias?

Response 5: See 161-162.

Changes in Text: *"All parts of the survey were mandatory to prevent missing data. Coverage error was minimized by inviting only ASOHNS trainees. There were no follow up surveys planned."*

See 382-386. *"Limitations of this study include the voluntary nature of the survey and is reflected in a smaller sample size and potential for sampling and non-response bias. Therefore, data may not be a true representation of the whole trainee cohort, as only those with an interest in Paediatric Otolaryngology may have responded."*

Comment 6: Given the low response rate, the results are meaningless. I would recommend repeating the survey - perhaps when there is a captive audience such as at the national registrar conference - and re-writing the manuscript with a view to re-submission.

Response 6: See limitations 382-386. See conclusions and relevance of study 397-413.

Changes in Text: *"Limitations of this study include the voluntary nature of the survey and is reflected in a smaller sample size and potential for sampling and non-response bias. Therefore, data may not be a true representation of the whole trainee cohort, as only those with an interest in Paediatric Otolaryngology may have responded. However, there was representation from all training regions and SET levels in the survey responses."*

"Paediatric airway management can present a challenging and stressful situation for ENT surgeons. This study provides insight into the Australian ENT trainee experience in paediatric airway management. It is reassuring that final-year trainees had good overall primary operator experience in various common technical and clinical situations. This correlated to higher confidence levels in these situations. As expected, the overall junior SET trainees had lower experience and confidence in paediatric airway management. Assessing the confidence and competence in these settings would be useful to guide further research.

Perceptions of the use of simulation were highly positive with 100% of respondents considering it as an effective medium to learn. Simulation scenarios are proven to complement surgical training, however few trainees have undertaken simulation exercises specific to the management of Paediatric Airway management. Access to simulation during training may provide opportunities to supplement direct clinical exposure."

Editorial Comments

1. Methods: the Confidence ratings and SET experience ratings make up the bulk of the analysis and this should be described in the METHODS – ie ordinal scale from 1-5 and set 1-5

Response: Please see line 153 and 155-156.

Changes in Text: *"The survey consisted of four parts: Part 1: Demographic information of the participant (level of SET (1-5) and number of completed paediatric ENT terms) to establish experience level; Part 2: Clinical experience of trainees (i.e. number of logbook procedures); Part*

3: Confidence ratings <mark>(1- not at all confident, 2- not very confident, 3- neutral, 4- confident and 5- very confident)</mark> in technical skills and clinical situations; Part 4: Training and simulation experience (See appendix 1)."

2.Line 245-254 ("Statistical analysis was performed … (Figure 2).") – is a group a statements with p values. The description is correlation of SET training and confidence levels. The actual correlation coefficient should be given here and the correct analysis is Spearman rank correlation coefficient (or Kendalls Tau B)

<u>Response:</u> Please see line 224-241.
<u>Changes in Text:</u> *"Statistical analysis was performed using Kendall's Tau(b) correlation. A significant p-value (<0.05) inidicated a significant correlation between the level of SET training and the responses. Increasing confidence was statistically significantly correlated with increasing level of SET training in paediatric technical sklls of nasal intubation ($\tau = 0.422$, $p = 0.021$), microlaryngoscopy and endoscopic airway management ($\tau = 0.655$, $p <0.001$), rigid bronchoscopy and airway foreign body removal ($\tau = 0.623$, $p<0.001$) and and paediatric tracheostomy ($\tau = 0.728$, $p<0.001$). There was no statistically significant correlation with increasing level of SET training in technical skills of oral intubation ($\tau = 0.354$, $p=0.058$), flexible bronchoscopy ($\tau = 0.250$, $p= 0.2$) and paediatric open airway reconstruction ($\tau = 0.295$, $p=0.14$).*

Increasing confidence was statistically significantly correlated with increasing level of SET training in paediatric clinical situations of post-tonsillectomy hemorrhage ($\tau = 0.599$, $p=0.002$), airway foreign body removal ($\tau = 0.625$, $p=0.001$), airway trauma ($\tau = 0.607$, $p=0.001$), post-extubation airway obstruction ($\tau = 0.691$, $p<0.001$), difficult intubation (e.g., severe Pierre Robin sequence) ($\tau = 0.685$, $p<0.001$), "can't intubate, can't ventilate" ($\tau = 0.639$, $p<0.001$). There was no statistical significant correlation with increasing level of SET training in clinical situations of post-extubation laryngospasm ($\tau = 0.525$, $p= 0.005$)."